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BULLETIN No. 16

RESEARCH SERVICE IN EDUCATION •


KEEPING • IN • TOUCH • WITH
THE • PUBLIC • SCHOOLS •

An Inventory of Educa-
tional conditions in Penn-
sylvania as revealed by
Age-Grade Studies from
1925 to 1935.

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FOREWORD

The biennial summarization of age-grade conditions in Pennsylvania presents a type of data which, if analyzed, gives a very good cross-section of educational progress throughout the State over a period of years. In the present study it was possible to present data showing the implications of age-grade conditions on a state-wide basis, in individual school districts, in school districts with various numbers of teachers, in third class districts with various types of supervision and also according to type of organization.

It is the earnest desire of the Department to utilize all reports submitted by all schools and school districts to the fullest extent in order that information of a state-wide nature may be as fully utilized as possible in every school and every school district of the Commonwealth, as well as in the Department of Public Instruction.

This bulletin is a continuation of the series of bulletins, "Statistical Research Studies - Keeping in Touch with the Public Schools," which have been published by the Department of Public Instruction. The title of the series has been slightly revised to fit into the general title of the enlarged plan for the publication by the Department in the field of research.

This particular series of bulletins will be one of three types of research publications. One type is a current circular which is published at frequent intervals. This circular gives the results of short studies on problems of immediate interest. Another type of publication, of which this bulletin is an example, includes research studies of a longer nature than the circulars. A third type of publication is a bulletin in which summaries of theses and other comprehensive studies will be included. This latter type of publication will be developed to complete the series of research publications by the Department. When the Department's complete research program is fully developed it will offer to the educational leaders both brief current and comprehensive researches which should be a contribution to the educational work of the State.

The material for this bulletin was compiled from the age-grade table reports submitted by the county and district superintendents for all school districts of the State. The bulletin was prepared under the direction of Donald P. Davis, Chief of Child Accounting and Research, Carl D. Morneweck, Supervisor of Research and J. Hugh Henderson, Statistician.

LESTER K. ADE
Superintendent of Public Instruction

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I INTRODUCTION

An effective method for determining educational conditions is through the study of an age-grade table. In spite of the fact that to the individual teacher compiling the data, it seems like a highly statistical report, many deductions can be gleaned therefrom pertaining to improvements in educational conditions, particularly as it relates to promotion practices, proper age for attending the various grades, and fitting the curriculum to the needs of the individual child.

Age-grade studies have been made biennially in Pennsylvania since the school year 1920-1921. These facts collected on a state-wide basis are of value in examining conditions periodically throughout the State, and in studying comparable school districts. One needs only to examine the report of the age-grade studies to notice the improvement in promotion practices from one biennium to the next.

Educators as a group a decade ago seemed to look with favor on the practice of skipping grades. The economic depression, however, did much to stabilize our educational philosophy which today emphasizes more the enrichment of the curriculum for superior students rather than the practice of skipping grades and as a consequence dumping them in the list of available employables at an earlier age than is probably justified.

The fact that skipping grades is not looked upon with so much favor as formerly does not imply that overage conditions are being encouraged. It is probably more dangerous to have a child repeat grades continually, with little hope for him in the future, than the possible practice of skipping grades.

The present bulletin attempts to present evidence to aid in the solution of educational problems in which age-grade conditions are elements involved. It purports to show existing conditions and attempt partial solutions if available data warrant such conclusions. In other cases the revealed conditions must be analyzed in terms of individual districts or schools if the problem is to be solved adequately.

II NATURE, SCOPE AND PURPOSE OF THE STUDY

Data obtained by the Department of Public Instruction are rather unique in that they generally report a complete sampling because reports are secured on a state-wide basis. The State thus has available data which can be isolated according to various criteria depending on the basis for study.

This bulletin is based on age-grade summaries submitted to the Division of Child Accounting and Research for each district of the first, second, and third class, and summarization by counties for all third and fourth class districts under the supervision of the county superintendent. In addition it was possible to obtain data showing age-grade conditions in schools with various numbers of teachers for forty-seven counties of the State. These two sources present the data for the various problems discussed in this bulletin.

The data available made it possible to undertake problems of a very general nature dealing with age-grade conditions on a state-wide basis. On the other hand it was likewise possible to partition the data to analyze problems pertaining to certain age levels, grade levels, sex differentiation, type of school organization, number of teachers in the school and type of local supervision.

The purpose of the study centers about seven problems which are as follows:

1. A study of age-grade conditions in Pennsylvania regardless of the type of school district or type of organization.
2. An analysis of age-grade conditions in first, second, and third class school districts, and third and fourth class school districts under the supervision of the sixty-six county superintendents.
3. A comparison of the variation of age within each of the twelve grades and the distribution of pupils of a constant age throughout the twelve grades, this comparison being based on age-grade conditions during the school year 1935-1936 with the school year 1925-1926.
4. A comparison of age-grade conditions with sex as a variable and a comparison of conditions by sex during the school year 1935-1936 with the previous decade.
5. Overage conditions in third class school districts with various types of local supervision.
6. An analysis of overageness in schools with various numbers of teachers under the supervision of the county superintendents of forty-seven counties in Pennsylvania.
7. A comparison of overageness in the upper six grades of the third class school districts in Pennsylvania organized under the 8-4 plan and those organized with the 6-6 or 6-3-3 plan.

III AGE-GRADE CONDITIONS

A. Status of Age-grade Conditions on a State-wide Basis

The summary of age-grade conditions throughout the State of Pennsylvania during the school year 1935-1936 is shown in Table 1, where aggregate figures and percentages are shown by grades according to sex and totals. Likewise, aggregate figures and percentages are shown for each age-grade group by half year periods ranging from five and one half through twenty-one and one half. The reader interested in the total figures will wish to examine this table more carefully than space permits here.

A composite view of age-grade conditions in Pennsylvania can be determined by examining Chart I. Casual observation reveals immediately that overageness is much more prevalent in all grades than underageness in all grades except Grade I reaching its peak in Grade VII where it is thirty-one percent and being almost as great in Grades V, VI, and VIII where overageness exists to the extent of twenty-eight, twenty-nine, and thirty percent respectively. Beginning with Grade I there is a consistent increase up to Grade VII due to retardation and no legal recourse for drop-outs from school in order to secure employment. The slight decrease of one percent from Grade VII to Grade VIII is probably due to the fact that a limited number of pupils have received employment, farm, or domestic service permits, with still a smaller number possibly reaching the limit of compulsory school attendance age. There is a decrease of six percent in overageness between Grades VIII and IX which is quite likely due primarily to three principal factors; namely, attainment of age sixteen, completion of the eighth grade, and dismissal through some kind of legal employment on one of the employment permits. An additional factor was that pupils under sixteen who completed the eighth grade and living more than two miles from a high school were no longer under the jurisdiction of the compulsory attendance law.

TABLE 1. AGE-GRADE TABLE FOR PENNSYLVANIA DURING THE SCHOOL YEAR 1935-1936

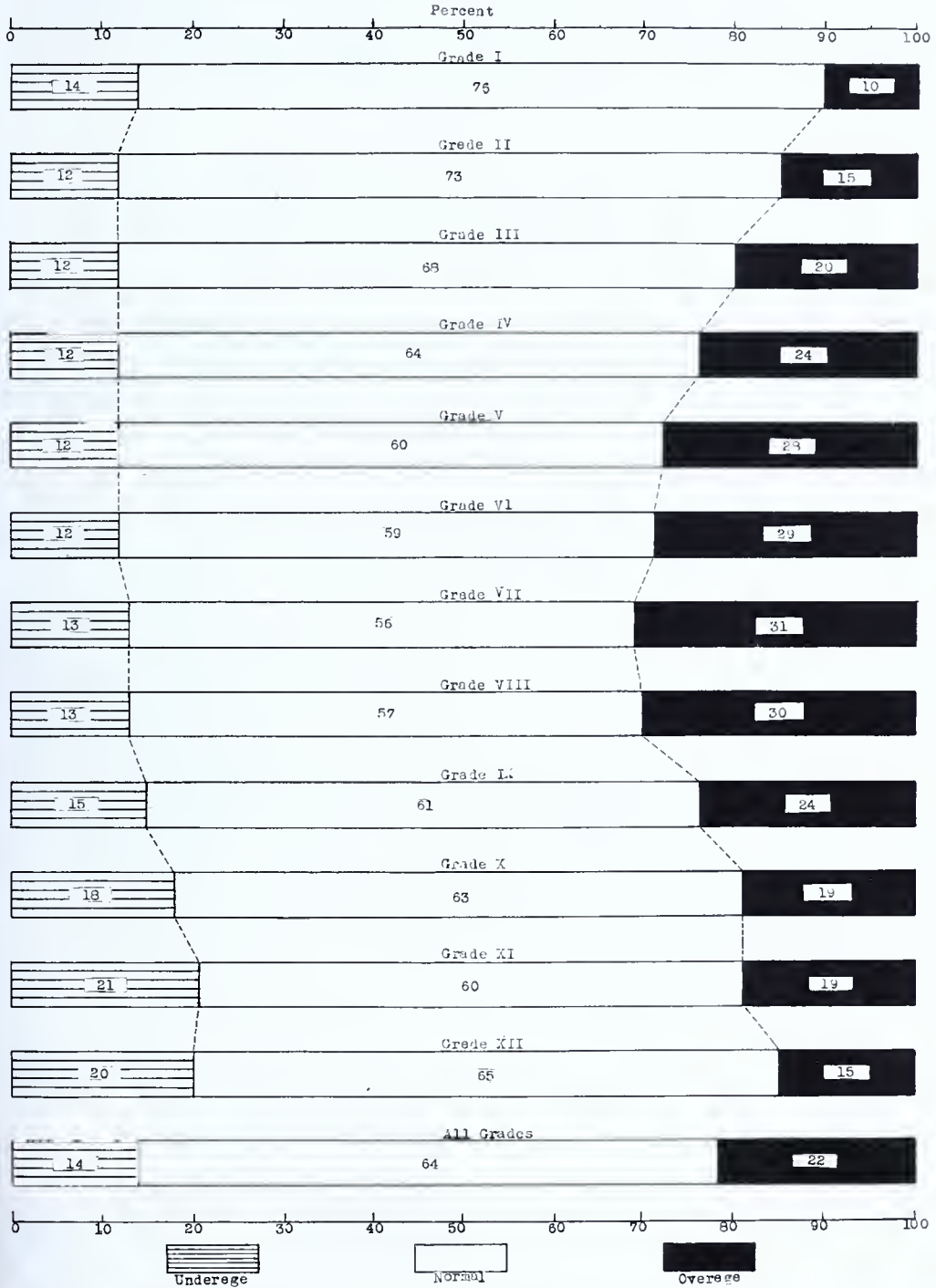
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Function of the Age Grade Table

As are grade labels similar to the accompanying copy serves a purpose very much similar to that of a memorandum. However, although the teacher does not give the corrections that should be made it is not at all desirable and provides the means necessary to study trends in the progress of children in a school. It shows where modifications should be made. It indicates to each superintendent, to each principal and to each teacher the desirability of answering completely the questions proposed in the Pennsylvania School Attendants Register.

CHART I

AGE-GRADE CONDITIONS IN EACH OF THE TWELVE GRADES OF THE PUBLIC SCHOOLS OF PENNSYLVANIA DURING THE SCHOOL YEAR 1935-1936



Read chart thus: In Grade I, fourteen percent of the pupils were underege, seventy-six percent were normal age, and ten percent were overage. On a state-wide basis with all grades combined, twenty-two percent were overage.

B. Age-grade Conditions Classified According to Class of School District.

For those persons interested in age-grade conditions in each of the twelve grades in every type of school district, Tables 2, 3, 4, and 5 are presented for every grade as well as segregated data for those school systems in which the seventh and eighth grades are maintained under the elementary division and those in which these two grades constitutes a part of the secondary school division.

TABLE 2. THE AGE-GRADE DISTRIBUTION BY GRADES WITH ELEMENTARY AND SECONDARY TOTALS FOR FIRST CLASS SCHOOL DISTRICTS DURING THE SCHOOL YEARS 1935-1936, 1931-1932 AND 1925-1926

Grade	Percent Underage			Percent Normal Age			Percent Overage		
	1935-1936	1931-1932	1925-1926	1935-1936	1931-1932	1925-1926	1935-1936	1931-1932	1925-1926
Elementary									
1	14	8	6	76	78	76	10	14	18
2	12	6	4	73	72	67	15	22	29
3	12	7	5	68	64	58	20	29	37
4	12	8	5	64	59	50	24	33	45
5	11	8	5	61	56	46	28	36	49
6	12	11	7	59	53	44	29	36	49
7	13	13	7	55	50	48	32	37	45
8	13	15	10	57	54	53	30	31	37
Elementary Grades 1-8	12	9	6	65	63	56	23	28	38
Secondary									
7	14	11	-	57	50	Inc. in	29	39	Inc.in
8	13	12	-	58	54	elem.	29	34	elem.
9	15	15	15	61	56	55	24	29	30
10	18	20	19	63	58	60	19	22	21
11	21	24	23	60	58	58	19	18	19
12	20	26	25	65	58	60	15	16	15
Secondary Grades 7-12	17	17	19	61	55	58	22	28	23
Grades 1-12	14	11	8	64	61	56	22	28	36

Examination of these four tables reveals that underageness in the elementary grades was quite comparable although it was highest during the school year 1935-1936 in third class districts and lowest in second class districts.

In the secondary grades, underageness was also most prevalent in 1935-1936 in fourth class districts under the supervision of county superintendents, being nineteen percent compared with seventeen percent in third class districts, fifteen percent in second class districts, and seventeen percent in first class districts. Considering all twelve grades, underageness is practically identical, existing to the extent of fourteen percent in first and second class districts, and fifteen percent in third class districts and fourth class districts.

**TABLE 3. THE AGE-GRADE DISTRIBUTION BY GRADES WITH ELEMENTARY AND SECONDARY TOTALS
FOR SECOND CLASS SCHOOL DISTRICTS DURING THE SCHOOL YEARS 1935-1936,
1931-1932 AND 1925-1926**

Grade	Percent Underage			Percent Normal Age			Percent Overage		
	1935-1936	1931-1932	1925-1926	1935-1936	1931-1932	1925-1926	1935-1936	1931-1932	1925-1926
Elementary									
1	14	11	9	77	79	76	9	10	15
2	12	10	7	74	74	71	14	16	22
3	11	9	8	70	69	64	19	22	28
4	13	9	9	65	64	57	22	27	34
5	13	10	10	63	61	53	24	29	37
6	12	10	10	62	59	52	26	31	38
7	10	11	12	59	58	54	31	31	34
8	10	9	15	61	63	58	29	28	27
Elementary Grades 1-8	11	10	10	68	67	61	21	23	29
Secondary									
7	14	15	-	58	55	Inc.in	28	30	Inc.in
8	14	16	-	60	59	elem.	26	25	elem.
9	14	17	18	63	60	60	23	23	22
10	16	18	19	64	61	63	20	21	18
11	18	20	24	64	61	60	18	19	16
12	19	13	25	66	62	61	15	15	14
Secondary Grades 7-12	15	18	21	63	60	61	22	22	18
Grades 1-12	14	13	12	65	64	61	21	23	27

**TABLE 4. THE AGE-GRADE DISTRIBUTION BY GRADES WITH ELEMENTARY AND SECONDARY TOTALS
FOR THIRD CLASS SCHOOL DISTRICTS DURING THE SCHOOL YEARS 1935-1936,
1931-1932 AND 1925-1926**

Grade	Percent Underage			Percent Normal Age			Percent Overage		
	1935-1936	1931-1932	1925-1926	1935-1936	1931-1932	1925-1926	1935-1936	1931-1932	1925-1926
Elementary									
1	17	15	13	75	76	73	8	9	14
2	14	13	9	72	72	68	14	15	23
3	14	13	10	68	66	61	18	21	29
4	13	12	11	64	63	55	23	25	34
5	13	12	10	61	60	52	26	28	38
6	13	13	11	60	57	50	27	30	39
7	14	13	13	55	53	50	31	34	37
8	14	12	15	58	58	54	28	30	31
Elementary Grades 1-8	14	13	11	65	64	59	21	23	30
Secondary									
7	15	14	-	58	56	Inc.in	27	30	Inc.in
8	14	13	-	60	61	elem.	26	26	elem.
9	17	16	17	61	58	56	22	26	27
10	19	18	19	62	60	58	19	22	23
11	21	20	20	61	60	58	18	20	22
12	19	23	24	67	62	60	14	15	16
Secondary Grades 7-12	17	18	19	62	59	58	21	23	23
Grades 1-12	15	14	13	64	63	58	21	23	29

TABLE 5. THE AGE-GRADE DISTRIBUTION BY GRADES WITH ELEMENTARY AND SECONDARY TOTALS FOR FOURTH CLASS SCHOOL DISTRICTS DURING 1935-1936 AND FOR FOURTH CLASS SCHOOL DISTRICTS AND THOSE THIRD CLASS SCHOOL DISTRICTS UNDER THE SUPERVISION OF COUNTY SUPERINTENDENTS DURING 1931-1932 AND 1925-1926

Grade	Percent Underage			Percent Normal Age			Percent Overage		
	1935-1936	1931-1932	1925-1926	1935-1936	1931-1932	1925-1926	1935-1936	1931-1932	1925-1926
Elementary									
1	15	14	12	74	73	69	11	13	19
2	12	12	9	71	69	64	17	19	27
3	13	13	10	65	62	58	22	25	32
4	13	12	10	61	59	53	26	29	37
5	12	12	11	59	55	49	29	33	40
6	13	13	12	57	53	47	30	34	41
7	13	14	13	55	51	49	32	35	38
8	13	14	15	56	54	50	31	32	35
Elementary Grades 1-3	13	13	11	63	60	56	24	27	33
Secondary									
7	15	16	-	58	54	Inc.in	27	30	Inc.in
8	15	15	-	60	59	elem.	25	26	elem.
9	18	19	20	60	57	54	22	24	26
10	21	21	23	61	59	57	18	20	22
11	25	23	23	58	58	56	17	19	21
12	22	26	24	64	59	58	14	15	18
Secondary Grades 7-12	19	21	22	61	58	56	20	21	22
Grades 1-12	15	14	12	62	60	56	23	26	32

Overageness has been materially reduced in Grades I-VIII in all classes of districts, being the greatest in the first class school districts of Pittsburgh and Philadelphia, where it has been reduced by fifteen percent. This should be expected since the greatest amount of overageness in 1925-1926 existed in first class districts. The next greatest reduction was in fourth class districts under the supervision of county superintendents being reduced from thirty-three percent to twenty-four and in third class districts from thirty percent to twenty-one percent. The least reduction was in second class districts where it diminished from twenty-nine to twenty-one percent, this being the lowest percentage.

Overageness in the elementary grades with the 8-4 organization existed to the least extent in second class and third class districts where it has been reduced to twenty-one percent as seen by scrutinizing Tables 2-5. Conditions in the secondary school grades are practically identical regardless of the type of district, being twenty percent for the fourth class districts under the supervision of county superintendents, twenty-one percent in third class districts and twenty-two percent in first and second class districts. Considering all twelve grades, overageness existed to the greatest extent in 1925-1926. In third and fourth class districts under the supervision of county superintendents, the amount was twenty-three percent. This was followed by first class school districts where it existed to the extent of twenty-two percent and least in second class districts and third class districts where it was twenty-one percent.

The age-grade conditions throughout the State are subdivided further in Table 6 where comparisons may be noted for each of the twelve grades at three different intervals during a ten-year period, namely, 1935-1936, 1931-1932, and 1925-1926. The data for the seventh and eighth grades are also segregated so that those school systems operating under the 8-4 plan are included in the elementary classification and those operating with the reorganized are included under the secondary division for 1931-1932, and 1935-1936. Underage conditions did not change materially over the ten-year period. One slight trend, however, may be noticed. There has been a slight increase of underageness in the primary grades, practically no change in Grades V-VIII and a very slight decrease in the upper four grades.

TABLE 6. THE AGE-GRADE DISTRIBUTION BY GRADES WITH ELEMENTARY AND SECONDARY TOTALS FOR ALL CLASSES OF SCHOOL DISTRICTS DURING THE SCHOOL YEARS 1935-1936, 1931-1932 AND 1925-1926

Grade	Percent Underage			Percent Normal Age			Percent Overage		
	1935-1936	1931-1932	1925-1926	1935-1936	1931-1932	1925-1926	1935-1936	1931-1932	1925-1926
Elementary									
1	14	13	11	76	75	71	10	12	18
2	12	11	8	73	70	66	15	19	26
3	12	11	9	68	64	59	20	25	32
4	12	11	9	64	60	53	24	29	38
5	11	11	10	61	57	49	28	32	41
6	12	12	11	59	55	47	29	33	42
7	13	14	12	55	52	50	32	34	38
8	13	14	14	57	56	52	30	30	34
Elementary Grades 1-8	12	12	10	65	62	57	23	26	33
Secondary									
7	14	14	-	57	53	Inc.in	29	33	Inc.in
8	13	14	-	58	58	elem.	29	28	elem.
9	15	17	18	61	58	56	24	25	26
10	18	19	20	63	59	59	19	22	21
11	21	22	23	60	59	57	19	19	20
12	20	25	24	65	60	60	15	15	16
Secondary Grades 7-12	17	18	20	61	58	58	22	24	22
Grades 1-12	14	14	12	64	61	57	22	25	31

Overage conditions as shown in Table 6 have changed much more during the ten-year period than underage conditions, decreasing from eighteen percent in 1925-1926 to twelve percent in 1931-1932, and then reduced to ten percent by 1935-1936 in Grade I. The greatest reduction appears in Grade IV where it has been reduced from thirty-eight to twenty-four percent, or a reduction of fourteen percent over a ten-year period. It becomes less pronounced again as the upper grades are approached, being nearly the same in Grades X, XI, and XII. It will be observed that the improvement was much more pronounced in Grades I-VIII than in the secondary Grades VII-XII, where there has been no decrease, it being twenty-two percent both in 1935-1936 and 1925-1926, whereas it was reduced by ten percent in the elementary schools over the ten-year period.

Table 7 gives a cross section of age-grade conditions in each of the four classes of school districts during the school year 1935-1936, and the decade previous, 1925-1926. It is evident that very little change has taken place in underageness, it having increased but one percent in the first, third, and fourth class districts. When overageness is considered, a definite picture appears. In every class of school district overageness has decreased a substantial amount over the ten-year period, it having decreased fourteen percent in first class school districts, six percent in second class school districts, and eight percent in third and fourth class school districts. Considering the State as a whole, overageness was reduced nine percent over the ten-year period. This represents desirable progress throughout the entire Commonwealth.

TABLE 7. STATUS OF AGE-GRADE CONDITIONS IN THE VARIOUS CLASSES OF SCHOOL DISTRICTS DURING THE SCHOOL YEARS 1935-1936 AND 1925-1926

Class of District	Percent Underage		Percent Normal Age		Percent Overage	
	1935-1936	1925-1926	1935-1936	1925-1926	1935-1936	1925-1926
First	9	8	69	56	22	36
Second	12	12	67	61	21	27
Third	14	13	65	58	21	29
Fourth	13	12	63	56	24	32
All Classes of Districts	14	12	64	57	22	31

The improvement in the reductions of overageness has been absorbed almost entirely by the normal age group, it having been shown previously that underage conditions remain practically the same. In reality this is a wholesome sign, because present day philosophy does not advocate skipping grades in order to graduate the pupils at an early age, because our complex society can scarcely provide work for persons in the late teens. The data show quite conclusively that pupils are progressing through school at the normal rate to a much greater degree at the present than a decade ago.

It is possible from the data available in the Department of Public Instruction to show the age-grade conditions for the elementary school districts of the first, second, and third classes of the State for comparison, these data being summarized in Table 8 according to the class of district. The reader can compare age-grade conditions in any district with the state-wide averages as they appeared in the previous tables. Table 9 summarizes the same type of data for fourth class districts under the jurisdiction of county superintendents in each of the sixty-six counties of the State. It must be borne in mind that it includes heterogeneous data, ranging from the records of one-teacher schools to comparatively large school systems where conditions are not comparable. It is to be hoped that in the future it will be possible to further segregate the data so that the summaries are more typical of any particular type of district.

TABLE 8. AGE-GRADE SUMMARIES FOR THE ELEMENTARY SCHOOLS IN INDIVIDUAL DISTRICTS OF THE FIRST, SECOND, AND THIRD CLASSES ACCORDING TO THE TYPE OF SUPERVISORY OFFICIAL IN CHARGE DURING THE SCHOOL YEARS 1935-1936 AND 1925-1926

District	Percent Underage		Percent Normal Age		Percent Overage	
	1935-1936	1925-1926	1935-1936	1925-1926	1935-1936	1925-1926
1	2	3	4	5	6	7
First Class						
Philadelphia city	11	6	68	56	21	38
Pittsburgh city	4	5	71	58	25	37
Total	11	6	65	56	24	38
Second Class						
Allentown city	18	15	69	67	13	18
Altoona city	14	11	68	59	18	30
Bethlehem city	8	No report	59	No report	33	No report
Chester city	5	6	62	55	33	39
Easton city	26	23	57	55	17	22
Eric city	5	7	67	57	28	36
Harrisburg city	10	18	71	62	19	20
Hazleton city	13	9	79	62	8	29
Johnstown city	7	5	64	60	29	35
Lancaster city	8	5	72	60	20	35
Lower Merion twp.	21	14*	63	60*	16	26*
McKeesport city	14	10	67	66	19	24
New Castle city	8	9	66	63	26	28
Norristown boro	12	8	73	61	15	31
Reading city	15	9	65	63	20	28
Scranton city	18	6	66	60	16	34
Upper Darby twp.	16	13*	76	68*	8	19*
Wilkes-Barre city	9	7	72	59	19	21
Williamsport city	13	20	68	66	19	27
York city	4	10	72	65	24	25
Total	14	10	65	61	21	29
Third Class (Districts with Superintendents)						
Abington twp.	14	18	66	57	20	25
Aliquippa boro	17	4	52	57	31	39
Ambridge boro	11	9	65	60	24	31
Archbald boro	16	14	61	50	23	36
Arnold boro	5	**	74	**	21	**
Ashland boro	21	18	64	60	15	22
Ashley boro	13	10	65	60	22	30
Banger boro	18	17	71	67	11	16
Beaver boro	16	**	77	**	7	**
Beaver Falls city	10	18	68	58	22	24

* Third Class, 1925-1926.

** Included in report of County Superintendent.

TABLE 8. AGE-GRADE SUMMARIES FOR THE ELEMENTARY SCHOOLS IN INDIVIDUAL DISTRICTS OF THE FIRST, SECOND, AND THIRD CLASSES ACCORDING TO THE TYPE OF SUPERVISORY OFFICIAL IN CHARGE DURING THE SCHOOL YEARS 1935-1936 AND 1925-1926-Continued

District	Percent Underage		Percent Normal Age		Percent Overage	
	1935-1936	1925-1926	1935-1936	1925-1926	1935-1936	1925-1926
1	2	3	4	5	6	7
Third Class (Districts with Superintendents)						
Bellevue boro	14	**	75	**	11	**
Bensalem twp.	8	**	62	**	30	**
Greensburg city	13	12	67	61	20	27
Greenville boro	18	17	64	61	18	22
Hanover boro	10	11	69	66	21	23
Haverford twp.	17	12	71	64	12	24
Hazle twp.	11	9	65	55	24	36
Hollidaysburg boro	15	**	68	**	17	**
Homestead boro	12	8	64	60	24	32
Honesdale Union	18	**	67	**	15	**
Huntingdon boro	15	16	69	61	16	23
Indiana boro	11	12	72	60	17	28
Jeannette boro	18	12	60	58	22	30
Kane boro	15	19	67	57	18	24
Kingston boro	17	9	65	68	18	23
Kittanning boro	16	17	72	59	12	24
Lansdale boro	24	**	67	**	9	**
Lansdowne boro	17	**	73	**	10	**
Lansford boro	27	21	66	60	7	19
Latrobe boro	17	13	66	63	17	24
Lebanon city	11	30	79	58	10	12
Leighton boro	30	**	63	**	7	**
Lewistown boro	15	20	75	62	10	18
Lock Haven city	16	12	73	59	11	29
Mahanoy city	42	26	53	64	5	10
Mahanoy twp.	25	14	66	75	9	11
Mauch Chunk twp.	25	**	71	**	4	**
McKees Rocks boro	6	2	60	47	34	51
Meadville city	10	8	64	55	26	37
Mechanicsburg boro	18	**	68	**	14	**
Middletown boro	16	13	63	55	21	32
Midland boro	13	**	69	**	18	**
Milton boro	12	20	71	60	17	20
Minersville boro	17	12	60	60	23	28
Monessen city	6	6	61	54	33	40
Monongahela city	14	7	71	65	15	28
Mount Carmel boro	18	12	60	58	22	30
Mt. Lebanon twp.	13	**	79	**	8	**
Mt. Pleasant boro	12	**	65	**	23	**
Mt. Pleasant twp.	9	7	63	49	28	44
Muhlenberg twp.	15	**	69	**	16	**
Munhall boro	15	13	71	65	14	22

** Included in report of County Superintendent.

TABLE 8. AGE-GRADE SUMMARIES FOR THE ELEMENTARY SCHOOLS IN INDIVIDUAL DISTRICTS OF THE FIRST, SECOND, AND THIRD CLASSES ACCORDING TO THE TYPE OF SUPERVISORY OFFICIAL IN CHARGE DURING THE SCHOOL YEARS 1935-1936 AND 1925-1926-Continued

District	Percent Underage		Percent Normal Age		Percent Overage	
	1935-1936	1925-1926	1935-1936	1925-1926	1935-1936	1925-1926
1	2	3	4	5	6	7
Third Class (Districts with Superintendents)						
Nanticoke city	12	9	66	60	22	31
Nanty-Glo boro	5	**	52	**	43	**
New Brighton boro	24	16	62	63	14	21
New Kensington boro	9	10	72	57	19	33
Newport twp.	21	12	64	65	15	23
North Braddock boro	9	**	71	**	20	**
Northampton boro	23	23	64	60	13	17
Oakmont boro	11	**	73	**	16	**
Oil City city	17	7	70	59	13	34
Old Forge boro	23	9	54	50	23	41
Olyphant boro	29	13	56	61	15	26
Palmerton boro	13	13	68	58	19	29
Phoenixville boro	25	24	58	54	17	22
Pittston city	23	8	62	61	15	31
Plymouth boro	14	**	71	**	15	**
Pottstown boro	14	18	71	64	15	18
Pottsville city	17	12	65	63	18	25
Punxsutawney boro	23	16	59	58	18	26
Radnor twp.	9	9	77	64	14	27
Rankin boro	7	5	67	52	26	43
Ridgway boro	8	16	71	60	21	24
Rochester boro	12	17	72	60	16	23
Rostraver twp.	8	7	74	59	18	34
Sayre boro	9	15	68	59	23	26
Scottdale boro	12	14	72	61	16	25
Shamokin boro	17	13	64	66	19	21
Sharon city	7	10	70	66	23	24
Shenandoah boro	25	7	58	49	17	44
Springfield twp.	24	**	63	**	13	**
Steelton boro	9	9	71	59	20	32
Summit Hill boro	20	**	68	**	12	**
Sunbury city	12	19	66	54	22	27
Swissvale boro	12	11	71	63	17	26
Tamaqua boro	20	8	68	60	12	32
Tarentum boro	9	12	67	62	24	26
Taylor boro	23	13	56	53	21	34
Throop boro	29	13	51	63	20	24
Titusville city	9	11	68	66	23	23
Tredyffrin twp.	10	**	56	**	34	**
Tyrone boro	5	8	71	65	24	27
Uniontown city	12	14	69	61	19	25
Upper Merion twp.	7	**	73	**	20	**
Vandergrift boro	8	9	77	65	15	26
Warren boro	12	10	70	68	18	22
Washington city	5	3	56	50	39	50

** Included in report of County Superintendent.

TABLE 8. AGE-GRADE SUMMARIES FOR THE ELEMENTARY SCHOOLS IN INDIVIDUAL DISTRICTS OF THE FIRST, SECOND, AND THIRD CLASSES ACCORDING TO THE TYPE OF SUPERVISORY OFFICIAL IN CHARGE DURING THE SCHOOL YEARS 1935-1936 AND 1925-1926-Continued

District	Percent Underage		Percent Normal Age		Percent Overage	
	1935-1936	1925-1926	1935-1936	1925-1926	1935-1936	1925-1926
1	2	3	4	5	6	7
Third Class (Districts with Superintendents)						
Waynesboro boro	15	6	67	64	18	30
West Chester boro	11	13	67	56	22	31
West Mahanoy twp.	27	14	60	61	13	25
West Pittston boro	18	**	69	**	13	**
Whitehall twp.	12	19	67	57	21	24
Wilkinsburg boro	23	10	69	67	8	23
Wilson boro	29	**	62	**	9	**
Windber boro	24	8	61	58	15	34
Winton boro	19	7	58	49	23	44
Yeadon boro	19	**	73	**	8	**
Third Class (Districts with Supervising Principals)						
Adams twp.	7	**	69	**	24	**
Avalon boro	11	**	72	**	17	**
Baldwin twp.	12	**	61	**	27	**
Bethel twp.	8	**	62	**	30	**
Brackenridge boro	15	**	64	**	21	**
Brentwood boro	20	**	71	**	9	**
Bristol boro	10	8	61	56	29	36
Butler twp.	6	**	59	**	35	**
Cass twp.	21	**	63	**	16	**
Centerville boro	9	**	59	**	32	**
Coaldale boro	2	**	91	**	7	**
Corapolis boro	16	**	61	**	23	**
Danville boro	12	**	68	**	20	**
Derry twp. (Westmoreland)	11	**	58	**	31	**
Duryea boro	15	**	69	**	16	**
East Bethlehem twp.	10	**	63	**	27	**
East Huntingdon twp.	5	**	72	**	23	**
East Pike Run twp.	14	**	57	**	29	**
East Stroudsburg boro	Not reported separately		Not reported separately			
Edwardsville boro	27	**	56	**	17	**
Elizabeth twp.	15	**	59	**	26	**
Forty-Fort boro	16	**	74	**	10	**
Foster twp.	18	**	64	**	18	**
Frackville boro	26	**	61	**	13	**
Freeland boro	19	**	67	**	14	**
Georges twp.	15	**	57	**	28	**
German twp.	11	5	64	45	25	50
Glassport boro	10	**	64	**	26	**
Grove City boro	20	**	73	**	7	**

** Included in report of County Superintendent.

TABLE 8. AGE-GRADE SUMMARIES FOR THE ELEMENTARY SCHOOLS IN INDIVIDUAL DISTRICTS OF THE FIRST, SECOND, AND THIRD CLASSES ACCORDING TO THE TYPE OF SUPERVISORY OFFICIAL IN CHARGE DURING THE SCHOOL YEARS 1935-1936 AND 1925-1926-Continued

District	Percent Underage		Percent Normal Age		Percent Overage	
	1935-1936	1925-1926	1935-1936	1925-1926	1935-1936	1925-1926
1	2	3	4	5	6	7
Third Class (Districts with Supervising Principals)						
Hanover twp.	25	**	60	**	15	**
Harrison twp.	8	**	65	**	27	**
Hempfield twp.	10	**	68	**	22	**
Jenkins twp.	33	**	54	**	13	**
Jersey Shore boro	Not reported separately		Not reported separately			
Kulpmont boro	13	**	60	**	27	**
Larksville boro	26	**	62	**	12	**
Luzerne boro	14	**	57	**	29	**
Luzerne twp.	12	**	60	**	28	**
Manheim twp.	15	**	66	**	19	**
Menallen twp.	14	**	52	**	34	**
Mifflin twp.	8	**	62	**	30	**
Millvale boro	8	**	60	**	32	**
Monaca boro	11	**	73	**	16	**
Morrisville boro	26	**	63	**	11	**
Mount Carmel boro	18	12	60	58	22	30
Mount Carmel twp.	19	**	57	**	24	**
Mount Oliver boro	14	**	73	**	13	**
Nazareth boro	7	**	76	**	17	**
North Versailles twp.	9	**	68	**	23	**
O'Hara twp.	9	**	60	**	31	**
Penn twp.(Allegheny	12	**	64	**	24	**
Penn twp.(Westmoreland	16	**	63	**	21	**
Perry twp.	8	**	69	**	23	**
Pitcairn boro	16	**	71	**	13	**
Plains twp.	18	**	65	**	17	**
Plum twp.	10	**	65	**	25	**
Portage twp.	8	**	52	**	40	**
Redstone twp.	7	5	59	48	34	47
Ridley twp.	11	**	63	**	26	**
Ross twp.	8	**	72	**	20	**
Saint Clair boro	19	**	67	**	14	**
Saint Marys boro	10	**	58	**	32	**
Schuylkill Haven boro	14	**	77	**	9	**
Scott twp.	16	**	63	**	21	**
Sewickley boro	8	**	67	**	25	**
Sewickley twp.	11	**	61	**	28	**
Shade twp.	9	**	52	**	39	**
Shaler twp.	14	**	68	**	18	**
Sharpsburg boro	6	**	55	**	39	**
South Fayette twp.	7	**	69	**	24	**
South Union twp.	9	**	67	**	24	**
South Williamsport boro	Not reported separately		Not reported separately			
Stowe twp.	11	**	76	**	13	**
Stroudsburg boro	Not reported separately		Not reported separately			

** Included in report of County Superintendent.

TABLE 8. AGE-GRADE SUMMARIES FOR THE ELEMENTARY SCHOOLS IN INDIVIDUAL DISTRICTS OF THE FIRST, SECOND, AND THIRD CLASSES ACCORDING TO THE TYPE OF SUPERVISORY OFFICIAL IN CHARGE DURING THE SCHOOL YEARS 1935-1936 AND 1925-1926-Concluded

District	Percent Underage		Percent Normal Age		Percent Overage	
	1935- 1936	1925- 1926	1935- 1936	1925- 1926	1935- 1936	1925 1926
1	2	3	4	5	6	7
Third Class (Districts with Supervising Principals)						
Sugar Creek twp.	25	**	60	**	15	**
Susquehanna twp.	13	**	57	**	30	**
Swatara twp.	20	**	55	**	25	**
Swoyerville boro	12	**	65	**	23	**
Turtle Creek boro	9	**	76	**	15	**
Unity twp.	11	**	62	**	27	**
West Deer twp.	7	**	62	**	31	**
West Hazleton boro	14	**	73	**	13	**
Westview boro	19	**	70	**	11	**
West York boro	8	**	69	**	23	**
Wilmerding boro	11	**	61	**	28	**
Third Class (Districts with No Local Administrative Officers)						
Bloomsburg twp.	14	19	71	61	15	20
Brownsville boro	14	**	66	**	20	**
Cambria twp.	9	**	61	**	30	**
Canton twp.	7	**	55	**	38	**
Center twp.	13	**	59	**	28	**
Conemaugh twp.	11	**	55	**	34	**
Cowanshannock	9	**	61	**	30	**
Cumru twp.	11	**	66	**	23	**
Cumberland twp.	9	**	62	**	29	**
Jenner twp.	7	**	61	**	32	**
Johnsonburg boro	25	14	51	60	24	26
Lawrence twp.	13	**	59	**	28	**
Logan twp.	11	**	57	**	32	**
McAdoo boro	16	**	69	**	15	**
North Huntingdon twp.	15	**	68	**	17	**
North Union twp.	10	**	62	**	28	**
Salem twp.	14	**	60	**	26	**
Smith twp.	7	**	67	**	26	**
Somerset twp.	13	**	56	**	31	**
South Huntingdon twp.	16	**	62	**	22	**
Spring twp.	25	**	67	**	8	**
Wilkes-Barre twp.	18	**	60	**	22	**
Total for All Third Class School Districts	14	13	65	58	21	29

** Included in report of County Superintendent.

TABLE 9. AGE-GRADE SUMMARY BY COUNTIES FOR FOURTH CLASS SCHOOL DISTRICTS DURING 1935-1936 AND FOR FOURTH CLASS SCHOOL DISTRICTS AND THOSE THIRD CLASS SCHOOL DISTRICTS UNDER THE SUPERVISION OF COUNTY SUPERINTENDENTS DURING 1925-1926

County	Percent Underage		Percent Normal Age		Percent Overage	
	1935- 1936	1925- 1926	1935- 1936	1925- 1926	1935- 1936	1925- 1926
1	2	3	4	5	6	7
Adams	9	11	59	52	32	37
Allegheny	9	11	67	58	24	31
Armstrong	11	10	62	50	27	40
Beaver	11	10	62	58	27	32
Bedford	11	10	56	44	33	46
Berks	14	16	67	57	19	27
Blair	11	12	60	52	29	36
Bradford	14	15	62	52	24	33
Bucks	16	15	62	58	22	27
Butler	10	9	62	53	28	38
Cambria	11	9	60	49	29	42
Cameron	15	15	62	53	23	32
Carbon	21	13	64	58	15	29
Centre	12	12	61	50	27	38
Chester	11	11	61	52	28	37
Clarion	13	12	65	54	22	34
Clearfield	14	7	59	47	27	46
Clinton	12	11	62	53	26	36
Columbia	14	11	65	53	21	36
Crawford	14	12	64	59	22	29
Cumberland	14	10	61	57	25	33
Dauphin	18	13	62	55	20	32
Delaware	13	10	63	58	24	32
Elk	10	9	62	53	28	38
Erie	14	12	64	55	22	33
Fayette	10	7	61	47	29	46
Forest	12	8	59	51	29	41
Franklin	11	7	59	49	30	44
Fulton	14	6	52	41	34	53
Greene	12	8	56	46	32	46
Huntingdon	11	9	58	44	31	47
Indiana	13	9	57	45	30	46
Jefferson	16	9	63	53	21	38
Juniata	15	10	55	51	30	39
Lackawanna	17	12	62	54	21	34
Lancaster	12	11	69	58	19	31
Lawrence	12	9	62	54	26	37
Lebanon	16	15	68	60	16	25
Lehigh	18	18	61	57	21	25
Luzerne	11	9	61	54	28	37
Lycoming	13	11	64	58	23	31
McKean	12	13	66	54	22	33
Mercer	13	14	68	60	19	26
Mifflin	11	11	61	54	28	35
Monroe	17	15	59	53	24	32
Montgomery	14	14	66	57	20	29
Montour	9	9	62	56	29	35

TABLE 9. AGE-GRADE SUMMARY BY COUNTIES FOR FOURTH CLASS SCHOOL DISTRICTS DURING 1935-1936 AND FOR FOURTH CLASS SCHOOL DISTRICTS AND THOSE THIRD CLASS SCHOOL DISTRICTS UNDER THE SUPERVISION OF COUNTY SUPERINTENDENTS DURING 1925-1926
Concluded

County	Percent Underage		Percent Normal Age		Percent Overage	
	1935- 1936	1925- 1926	1935- 1936	1925- 1926	1935- 1936	1925- 1926
1	2	3	4	5	6	7
Northampton	15	12	61	59	24	29
Northumberland	17	11	61	52	22	37
Perry	13	9	58	50	29	41
Pike	19	13	61	53	20	34
Potter	16	13	58	54	26	33
Schuylkill	19	12	65	55	16	33
Snyder	9	13	65	55	26	32
Somerset	12	10	58	47	30	43
Sullivan	15	9	61	51	24	40
Susquehanna	12	11	64	56	24	33
Tioga	15	14	66	54	19	32
Union	17	17	64	61	19	22
Venango	16	11	64	56	20	33
Warren	15	14	64	58	21	28
Washington	10	8	60	50	30	42
Wayne	17	13	60	54	23	33
Westmoreland	11	8	67	53	22	39
Wyoming	15	14	64	56	21	30
York	16	15	61	55	23	30
Total	13	12	63	56	24	32

C. A Comparison of Variation of Age within Grades and Distribution of Pupils of a Constant Age in Various Grades

A method by which the distribution of pupils throughout the various grades can be studied according to age at any particular period or at periodic intervals is by an examination of the percent of each age-group in various grades. Table 10 presents the distribution of age-groups for all twelve grades during the school year 1935-1936 and 1925-1926 in detailed form. Close inspection reveals an improvement in this condition over the ten-year period, the tendency for a pupil to be in the normal grade for his age being much more pronounced at the later period.

TABLE IC. COMPARISON OF THE DISTRIBUTION OF PUPILS OF EACH AGE IN THE VARIOUS GRADES DURING THE SCHOOL YEARS 1935-1936 AND 1925-1926

Age	B										E									
	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten	Eleven	Twelve	One	Two	Three	Four	Five	Six	Seven	Eight
1935	1925	1935	1925	1935	1925	1935	1925	1935	1925	1935	1925	1935	1925	1935	1925	1935	1925	1935	1925	1935
5	99.6	98.9	.4	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1
6	85.4	89.0	14.5	11.0	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1
7	18.8	32.4	67.1	57.2	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
8	3.7	9.0	21.9	32.0	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5	.5
9	.8	2.4	6.0	12.0	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
10	.2	.8	1.6	4.0	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
11	.1	.3	.5	1.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
12	.1	.1	.1	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
13	.1	.1	.1	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
14	.1	.1	.1	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
15	.1	.1	.1	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
16	.1	.1	.1	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
17	.1	.1	.1	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
18	.1	.1	.1	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
19	.1	.1	.1	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
20	.1	.1	.1	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
21	.1	.1	.1	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
Over																				

CHART II

THE PERCENT OF PUPILS OF EACH AGE GROUP IN THE NORMAL OR MOST APPROPRIATE GRADE FOR THE PARTICULAR AGE DURING THE SCHOOL YEARS 1935-1936 AND 1925-1926

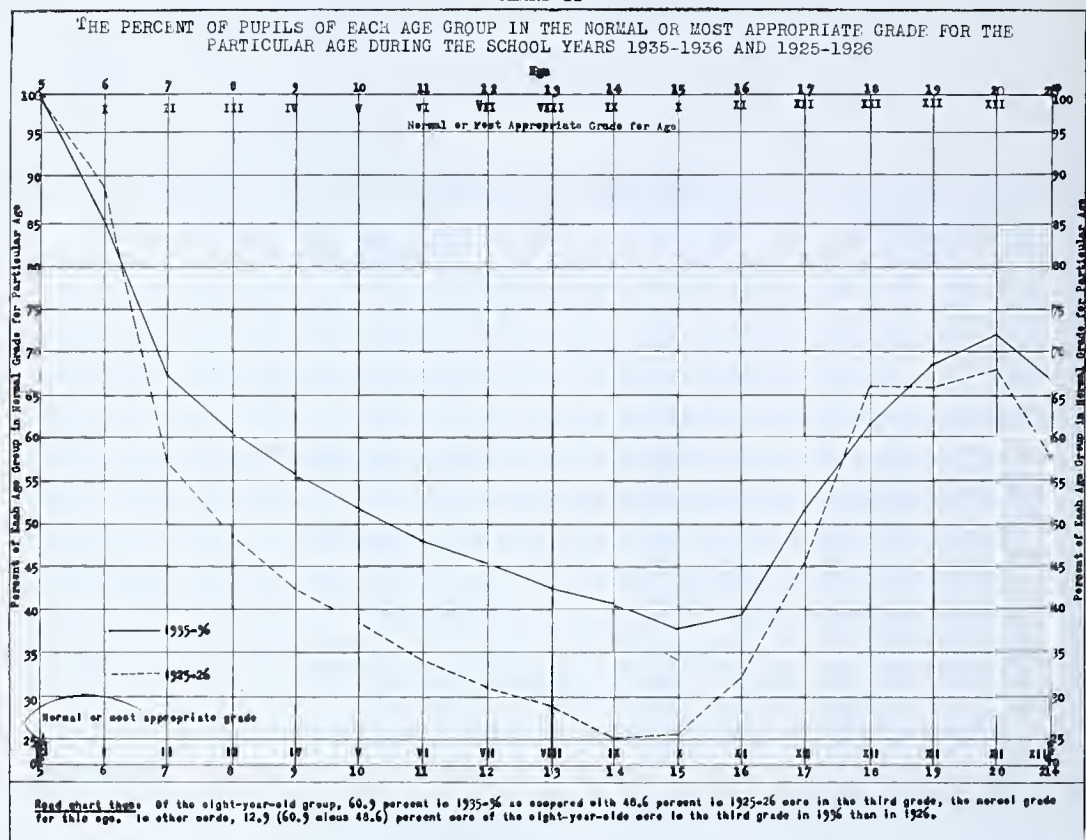


Chart II brings out much more clearly the conditions existing at present as well as the general improvement which took place over the ten-year period. An individual of a given age normally belongs in a certain grade and this chart indicates the percent of the pupils of each age in the normal or most appropriate grade. It is obvious that obliteration of excessive overageness has taken place within the last ten years, especially from ages seven through sixteen where the improvement is most marked. Naturally all pupils five years of age belong in the first grade if in a public school unless these same pupils are in the kindergarten. Approximately 3.5 percent more pupils (89.0-85.5) of the six-year-olds were in the appropriate grade in the school year 1925-1926 than in the school year 1935-1936. This was also true for the eighteen-year-olds in which age-groups approximately 4.5 percent (66.0-61.5) more were in the normal grade in 1925-1926.

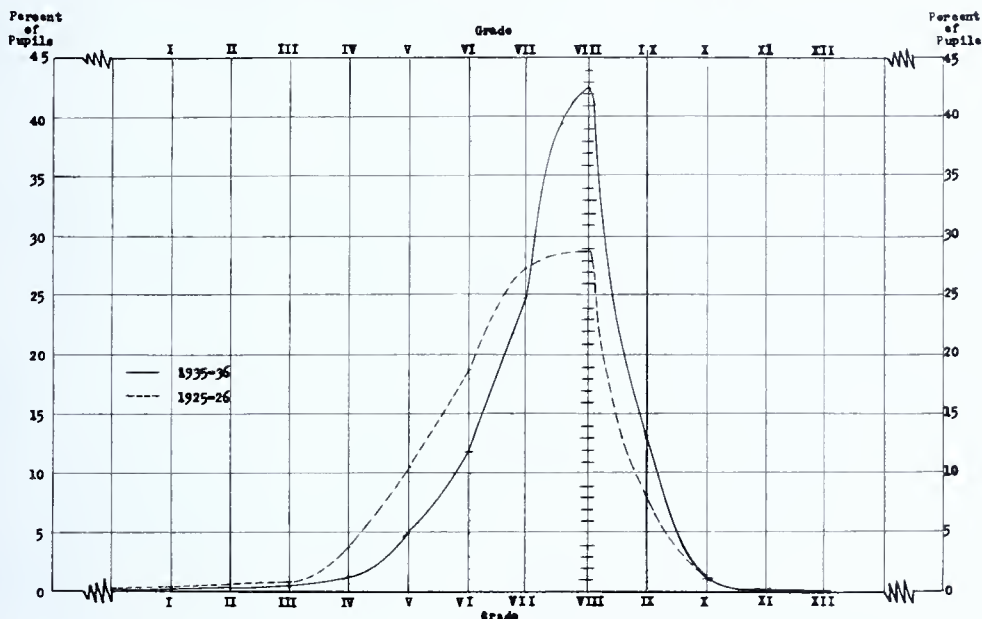
With these exceptions, improvement in all age-groups can be seen although it is obvious that retardation was very prevalent for the seven-year-old group and increased from year to year at a rapid rate until age fourteen during 1925-1926 and age fifteen in 1935-1936. The encouraging feature is the fact that retardation was not nearly so pronounced in 1935-1936 as in the previous decade. However, there is still opportunity for improvement when it is observed that the lowest point occurred at age fifteen in 1935-1936, only 38.5 percent of this age-group being in the most normal grade. This work is an improvement over the previous decades at which time the lowest point was twenty-five percent for the fourteen-year-olds.

The required attendance age has been raised to seventeen years of age for the school year 1938-1939 and to eighteen years beginning with the school year 1939-1940 and each year thereafter. Farm and domestic service permits may be

issued only to pupils attaining the age of fifteen since July 1, 1937. These two factors make it even more important that steps be taken to reduce retardation by developing a curriculum better adjusted to the needs, interests, and capacities of boys and girls who normally drop out of school because of legal provisions or maladjustment.

CHART III

A COMPARISON OF THE GRADE PLACEMENT OF THIRTEEN-YEAR-OLD PUPILS IN THE PUBLIC SCHOOLS OF PENNSYLVANIA DURING THE SCHOOL YEARS 1935-1936 WITH 1925-1926



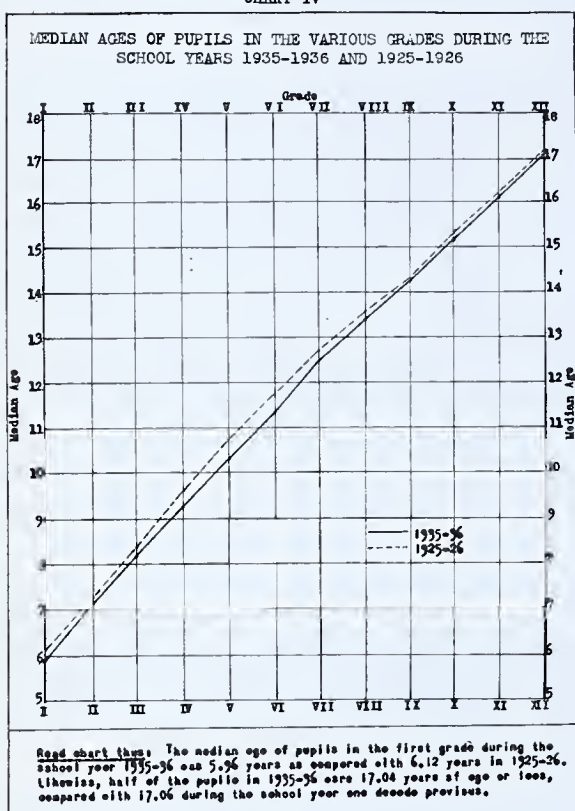
Read chart thus: In 1935-36, 42.53 percent of the thirteen year old pupils were in the eighth grade, compared with 28.95 percent in 1925-26. Comparisons of any other grade are made in the same manner.

Chart III probably presents the most thorough analysis of retardation and acceleration because it shows the distribution of thirteen-year-old pupils throughout the twelve grades. Until July 1, 1937 pupils were permitted to be dismissed from school on farm and domestic permits between the ages of fourteen and sixteen, which meant that certain individuals who were fourteen years or over were not in school regularly whether they had completed the secondary school curriculum or not.

An examination of the chart immediately reveals an improvement in the proper placement of thirteen-year-old pupils for the distribution of this group in 1935 is much more leptokurtic with almost all the thirteen-year-olds falling in Grades VI-IX, whereas in the decade previous students were rather scattered from Grades IV-IX. An interesting observation is the fact that there were practically as many of the thirteen-year-olds in Grade VII during 1925-1926 as in Grade VIII, the percentage being 27.2 and 29.0. The wholesome indication is that the number of thirteen-year-olds belonging in Grade VIII has been increased by approximately 13.5 percent (42.5-29.0). The fact that there were 27.2 and 24.6 percent in the seventh grade during 1925-1926 and 1935-1936 need not be alarming because some pupils do not enter school before they become seven years of age. Of course, it must be borne in mind that some of this group comprises those who have been retarded.

Still another approach for determining progress regarding age-grade conditions with accompanying retardation and acceleration is by an examination of

CHART IV



the median ages of pupils in each of the twelve grades in 1935-1936 and the decade previous. Chart IV reveals that in every grade the median age of pupils was less during the latter period. The differences in age as disclosed by Chart IV and Table 11, range from .02 years in the twelfth grade to .41 and .40 in the fifth and sixth grades, the greatest reduction in median age appearing in the upper four grades. This is due primarily to the fact that pupils who have reached the required attendance age had dropped out of school in both decades for which data are presented here. Consequently this would not affect the median ages in the upper four grades to any appreciable extent.

Careful scrutinization of Table 11 brings to light the fact that when sexes are isolated, the median age of both boys and girls was less in 1935-1936 than in 1925-1926 in each of the twelve grades except for the boys of Grades XI and XII where they were slightly younger in the earlier decade, although in an almost negligible amount. These data indicate the predominance of overageness among boys.

TABLE 11. MEDIAN AGES OF PUPILS IN THE VARIOUS GRADES OF THE PUBLIC SCHOOLS DURING THE SCHOOL YEARS 1935-1936 AND 1925-1926 ACCORDING TO SEX

Grade	Median Ages of Pupils During School Year					
	1935 - 1936			1925 - 1926		
	Boys	Girls	Total	Boys	Girls	Total
I	6.00	5.93	5.96	6.13	6.11	6.12
II	7.16	7.02	7.09	7.41	7.28	7.25
III	8.25	8.06	8.16	8.41	8.37	8.39
IV	9.34	9.12	9.23	9.74	9.48	9.61
V	10.46	10.18	10.50	10.84	10.57	10.71
VI	11.45	11.10	11.32	11.87	11.57	11.72
VII	12.50	12.28	12.49	12.83	12.52	12.68
VIII	13.50	13.29	13.36	13.65	13.41	13.53
IX	14.38	14.13	14.25	14.44	14.22	14.32
X	15.26	15.03	15.13	15.48	15.09	15.27
XI	16.24	15.96	16.08	16.22	16.02	16.12
XII	17.17	16.94	17.04	17.14	16.98	17.06

The problem of overageness as related to sex is discussed in detail in the next section where considerably more substantiating data are presented.

D. Age-grade Conditions with Sex As A Variable

In the previous section incidental reference was made to the difference in median ages of boys and girls in the various grades. The difference is sufficiently manifested to be discernible through casual inspection of Table 11. The differences in age-grade conditions are worthy of considerable thought and study as data in this section will show.

A rather comprehensive view of age-grade conditions according to sex can be obtained by an examination of Table 12 where the percentages are given for both

TABLE 12. AGE-GRADE DISTRIBUTIONS BY SEX AND GRADE DURING THE SCHOOL YEARS
1935-1936 AND 1925-1926

Year	Age- Grade Condi- tions	Sex	G R A D E												
			I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Total
School Year 1935-1936	Under	B	13	11	11	10	10	11	11	11	13	15	18	18	12
		G	15	13	14	14	14	14	15	15	17	21	24	23	16
		T	14	12	12	12	12	12	13	13	15	18	21	20	14
	Normal	B	76	71	65	61	57	55	53	54	58	60	58	63	61
		G	77	75	70	67	64	62	60	61	64	65	63	66	66
		T	76	73	68	64	61	59	56	57	61	63	60	65	64
	Over	B	11	18	24	29	33	34	36	35	29	25	24	20	27
		G	8	12	16	19	22	24	25	24	19	14	13	11	18
		T	10	15	20	24	27	29	31	30	24	19	19	15	22
School Year 1925-1926	Under	B	11	7	8	8	8	9	10	13	16	18	20	22	10
		G	11	9	10	10	11	12	14	16	20	22	25	26	13
		T	11	8	9	9	10	11	12	14	18	20	23	24	12
	Normal	B	70	64	57	50	47	45	47	49	54	57	56	58	55
		G	73	68	61	56	52	50	52	54	58	61	59	61	59
		T	71	66	59	53	49	47	50	52	56	59	57	60	57
	Over	B	19	29	35	42	45	46	43	38	30	25	24	20	35
		G	16	23	29	34	37	38	34	30	22	17	16	13	28
		T	18	26	32	38	41	42	38	34	26	21	20	16	31

sexes as well as the totals with boys and girls combined. In this table overageness, underageness, and those in the normal grade for the particular age are considered. Chart V presents a clearer picture of the two sexes at ten-year intervals even though it depicts only overageness and underageness. Mere inspection immediately brings out two very pronounced facts. In the first place, overageness has been materially reduced regardless of sex over the ten-year period and likewise underageness in general has increased very slightly. In the second place a more profound indication is the consistent tendency for more boys to be overage than girls regardless of grade level or decade. This same condition prevails as far as underageness is concerned where girls excel the boys in every grade level in both decades except in the first grade during the school year 1925-1926. Overageness reached its maximum in the sixth grade in 1925-1926 when the percentages for boys, girls, and total were forty-six, thirty-eight, and forty-two respectively. The maximum amount of overageness was not noticeable in 1935-1936 until Grade VII was reached when the percentages in the same order were thirty-six, twenty-five, and thirty-one. Underageness on the other hand in both decades increased gradually from grade to grade when Grade I is disregarded.

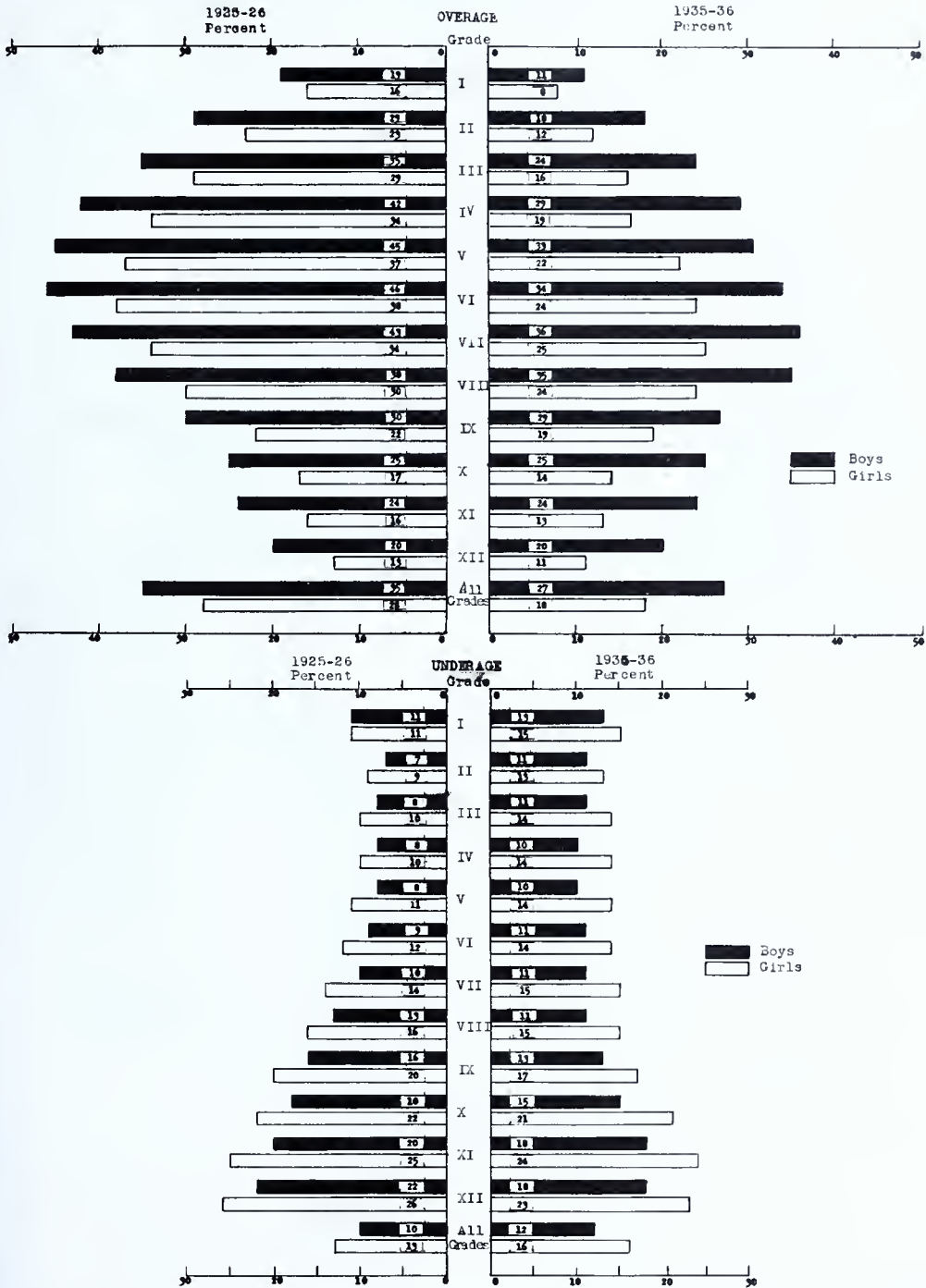
In this connection further light is thrown on this problem of sex variation by considering the distribution of pupils according to overageness at various age-levels considering ages six through eighteen. These data are presented at

TABLE 13. AGE-GRADE CONDITIONS IN THE PUBLIC SCHOOLS OF PENNSYLVANIA TAKEN AT HALF-YEAR
AGE-INTERVALS FOR THE SCHOOL YEARS 1935-1936 AND 1925-1926

Age	School Year 1935-36						School Year 1925-26					
	Underage			Normal			Underage			Normal		
	Boys	Girls	Overage	Boys	Girls	Overage	Boys	Girls	Overage	Boys	Girls	Overage
6	2	2	98	0	0	3	3	97	97	0	0	00
7	3	3	97	0	0	3	5	97	95	0	0	00
8	3	5	91	6	4	4	5	84	85	12	10	71
9	4	6	85	11	6	5	7	75	79	20	14	81
10	4	6	80	16	9	5	7	69	74	26	19	91
11	5	7	76	19	12	6	8	65	68	31	24	101
12	5	7	72	23	15	7	8	56	62	37	30	111
13	6	8	68	26	17	5	6	53	61	42	33	121
14	5	7	66	29	19	5	7	48	57	47	36	131
15	5	7	62	33	22	5	7	43	52	52	41	141
16	5	8	62	33	19	6	9	52	62	42	29	151
17	0	0	71	84	29	0	0	67	78	33	22	161
18	0	0	55	68	45	0	0	51	63	49	37	171

CHART V

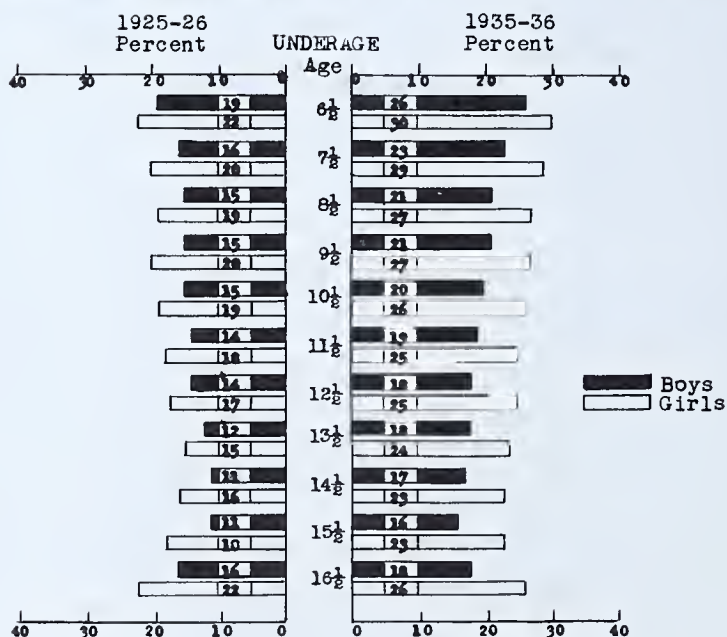
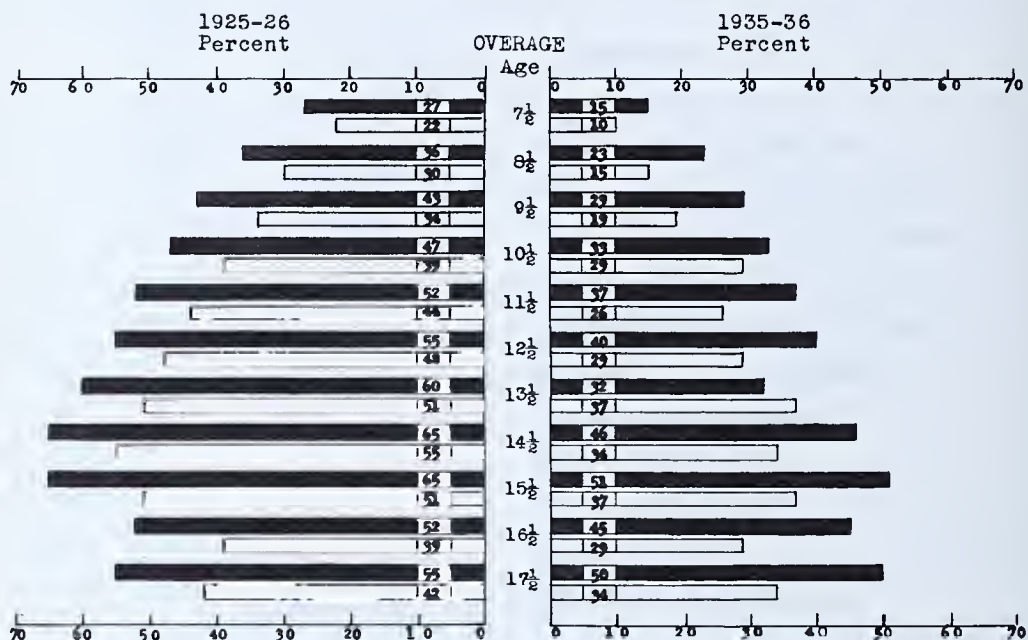
CHANGES IN OVERAGE AND UNDERAGE BY GRADES WHEN COMPARING THE SCHOOL YEAR 1935-1936 WITH THE SCHOOL YEAR 1925-1926



Read chart thus: During the school year 1925-26, nineteen percent of the boys and sixteen percent of the girls in the first grade were overage as compared to eleven percent and eight percent respectively in 1935-36. Reference to the lower chart shows under-age increased by three percent among the boys and four percent among the girls in the third grade over the ten year period.

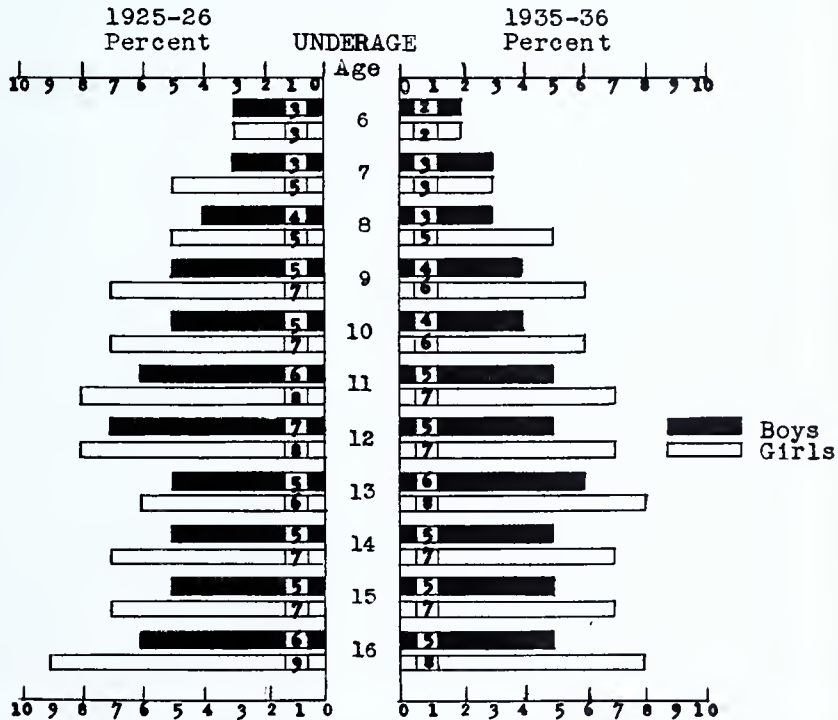
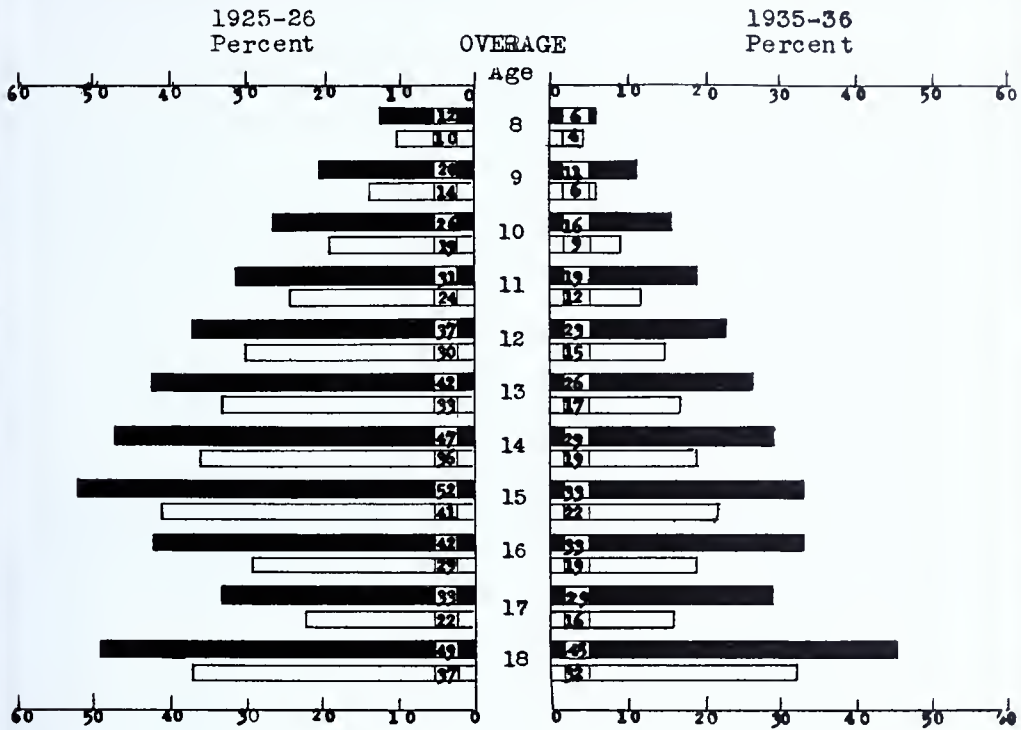
CHART VI

CHANGES IN OVERAGENESS AND UNDERAGENESS ACCORDING TO SEX AND BY AGES
ORDINARILY FOUND IN THE PUBLIC SCHOOLS WHEN COMPARING THE
SCHOOL YEAR 1935-1936 WITH THE SCHOOL YEAR 1925-1926



Read chart thus: During the school year 1925-26, of the pupils 7½ years of age, twenty-seven percent of the boys as compared with twenty-two percent of the girls were overage, whereas ten years later it was reduced to fifteen percent among boys and ten percent among girls. Likewise, comparing the school years 1925-26 with 1935-36, it can be said that underageness among 11½ year olds increased by five percent among boys, and seven percent among girls in the latter school year mentioned.

CHANGES IN OVERAGENESS AND UNDERAGENESS ACCORDING TO SEX AND BY AGES
ORDINARILY FOUND IN THE PUBLIC SCHOOLS WHEN COMPARING THE
SCHOOL YEAR 1935-1936 WITH THE SCHOOL YEAR 1925-1926



Read chart thus: During the school year 1925-26, of the pupils eight years of age, twelve percent of the boys as compared to ten percent of the girls were overage, whereas ten years later overageness among the boys was reduced to six percent and four percent among the girls. In both school years, the percent of underageness among the fourteen year olds remained the same for both sexes.

half year intervals in Table 13 and Charts VI and VIa. The same general tendency is shown in holding age constant as when grade was held constant. Overageness in both sexes has been substantially reduced at all ages over the ten-year period, while underageness has had a slight tendency to increase in each age group. In both decades there are more boys overage than girls. The maximum overage conditions for both sexes were reached at ages $14\frac{1}{2}$ and $15\frac{1}{2}$ in 1925-1926 and age $15\frac{1}{2}$ in 1935-1936. Tables 12 and 13 and Charts V, VI, and VIa reveal an additional wholesome tendency in that overageness did not increase so rapidly from one year to the next in 1935-1936 as in the previous decade, thus showing that the school seems to be better adjusted to fitting the needs of pupils or conversely that schools have a tendency to pass pupils from grade to grade with less repetition. The previous tables and charts dealing with the sex variable have shown so vividly the excess overageness of boys over girls and the more wholesome indication that overageness has been materially reduced that it precludes the extent to which overageness was more prevalent among boys in 1935-1936 than in 1925-1926.

TABLE 14. PERCENT OVERAGENESS OF BOYS IS OF THAT FOR GIRLS
BY GRADES DURING SCHOOL YEARS 1935-1936 AND 1925-1926

Grade	Percent Overageness of Boys is of Girls In		Increase in Percent Overageness of Boys Exceeds that of Girls in 1935-1936 over 1925-1926
	1935-1936	1925-1926	
I	137.5	118.8	+ 18.7
II	150.0	126.1	+ 23.9
III	150.0	120.7	+ 29.3
IV	152.6	123.5	+ 29.1
V	150.0	121.6	+ 28.4
VI	141.7	121.1	+ 20.6
VII	144.0	126.5	+ 17.5
VIII	145.8	126.7	+ 19.1
IX	152.6	136.4	+ 16.2
X	178.6	147.1	+ 31.5
XI	184.6	150.0	+ 34.6
XII	181.8	153.8	+ 28.0
Total	150.0	125.0	+ 25.0

Table 14 indicates the situation in each grade. By determining the percent to which overageness of boys exceeds that of girls in each grade, it is possible to determine the trend from one decade to the next. For example, in Grade IV during 1935-1936, twenty-nine percent of the boys were overage as compared with nineteen percent of the girls, (Chart V) which stated another way implies that overageness among boys in this particular grade was 152.6 percent of that for girls. In this same grade the previous decade, overageness among boys was 123.5 percent of that present among girls. It is thus obvious that the differences between sexes are more pronounced in this grade during the latter decade with nearly an increase of 29.1 percent (152.6-123.5). It is observed from Table 14 that the difference in overageness between boys and girls is more pronounced in every grade than it was ten years earlier. The excess in the percent of overageness ranges from 17.5 percent in Grade VII to 34.6 percent in Grade XI and 25.0 percent considering all twelve grades. This fact presents a real challenge to every person connected with education. Even though age-grade conditions are improved, the picture is very pathetic as far as boys are concerned. Several possibilities for this pronounced difference seem quite plausible, although the extent to which any one influences the picture is very difficult to ascertain. It seems quite likely that the curriculum of the elementary and especially secondary schools is not as well adjusted to the needs, interests, and capacities

of boys as for girls. On the other hand, there is also the possibility that the offerings meet the needs of boys quite well, but that they may require different teaching methods than girls.

Another factor which may cause this apparent difference in overageness between boys and girls deals with attitudes. It may be that girls are more docile in the classroom than boys and cause less disciplinary problems. Boys as a group are more likely to challenge what may be said by teachers, thus setting up personality clashes which sooner or later effect the school work. It seems entirely probable that the attitude of the boys and girls toward the teacher and the attitudes of teachers toward boys and girls are very important factors in school progress.

The reader must bear in mind that these are suppositions which are not substantiated by any data here. All that is shown is the condition which exists but it does present a real challenge, and a very interesting problem for research which should be carried on in every individual school district as well as on a state-wide basis. It is even more challenging when one considers the additional boys and girls remaining in school in the future years as the required attendance limit is gradually moved from sixteen to eighteen.

Overageness has been discussed thus far in general terms. At no time was any mention made of the number of years overageness existing. In connection with sex differences it seems worthwhile to determine the number of years that boys and girls are overage. In the figures that are to follow, the reader must guard against accepting them too literally, because children in the past were not required to attend school until they reached eight years of age. It would thus be possible under this condition for a pupil to appear overage and yet never have been retarded a single year in school. On the other hand it can be said in general that overageness and retardation are very closely related.

TABLE 15. PERCENT OF OVERAGE PUPILS DISTRIBUTED ACCORDING TO THE NUMBER OF YEARS OF OVERAGENESS BY GRADES AND BY SEX DURING THE SCHOOL YEARS 1935-1936 AND 1925-1926

Grade	NUMBER OF YEARS OVERAGE											
	Up to one Year				More than One Year Up to Three Years				Over Three Years			
	1935-1936		1925-1926		1935-1936		1925-1926		1935-1936		1925-1926	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
I	8.51	6.21	13.38	11.85	2.13	.79	4.99	3.67	.33	.18	.71	.46
II	12.95	8.85	18.26	15.54	4.74	2.75	8.90	6.50	.58	.27	1.48	.98
III	15.35	10.79	20.29	17.37	7.80	4.40	12.84	9.48	1.02	.49	3.51	1.58
IV	17.12	12.72	21.14	18.82	10.40	6.10	16.68	12.70	1.56	.71	3.73	2.29
V	17.74	13.75	21.24	19.47	12.64	7.66	19.67	14.98	2.15	.99	4.29	2.49
VI	17.73	14.31	22.11	20.51	14.50	3.44	21.34	15.63	1.80	.74	2.64	1.50
VII	19.47	15.70	22.94	19.86	15.95	9.30	14.04	13.50	.71	.27	.81	.57
VIII	21.36	16.52	24.34	20.43	12.99	7.35	13.76	9.31	.38	.14	.25	.17
IX	20.67	14.78	21.64	17.14	8.42	3.73	8.15	5.14	.31	.11	.55	.23
X	22.35	10.69	17.41	13.38	7.54	3.18	8.11	4.03	.29	.08	.14	.50
XI	17.59	10.63	17.75	12.99	6.06	3.51	5.98	3.32	.27	.10	.44	.17
XII	14.27	8.36	14.35	10.25	5.05	2.03	5.92	2.73	.22	.08	-	-

Read table as follows: In Grade I, during 1935-1936, 8.51 percent of the boys were one year or less overage, as compared with 13.38 percent in 1925-1926. In the same grade, .79 percent of the girls were more than one year and up to three years overage during 1935-1936, as compared to 3.67 percent ten years previous. Of the boys in Grade I, .33 percent were over three years overage in 1935-1936, as compared with .71 percent in 1925-1926.

Table 15 discloses the number of years overageness existing among boys and girls. When the group of pupils who are one year or less overage is examined, it

is seen that conditions are considerably improved among both boys and girls over the ten-year period. There were fewer boys and girls in every grade during 1935-1936 than in 1925-1926, except in the case of the boys in the tenth grade in which case only 17.41 percent were one year or less overage in 1925-1926 as compared with 22.35 percent one decade later. The next group to examine is those persons who are from one year up to three years overage. This group is considerably smaller in 1935-1936 than ten years earlier. There were more boys and girls retarded from one to three years in 1925-1926, except in the case of the boys in Grades IX and XI, and in the case of the girls in Grade XI. In each of these three instances, however, the difference at the two periods compared is almost negligible. The number of girls in each grade is roughly from one-half to three-fourths the number of boys. This substantiates still further the previous supposition of the existence of greater maladjustment among boys than among girls.

The last group to be considered is that consisting of boys and girls who are over three years overage. The greatest reduction in overageness appears in this group. The highest percent represented in the 1935-1936 period being in the fifth grade where 2.15 percent of the boys were more than three years overage. Conditions again have improved in every grade except boys in the eighth and tenth grades. The greatest improvement exists with this group in practically every case, there being less than half as many boys and girls in this group in each grade in 1935-1936 than in the school year ten years previous. The appalling fact is that the ratio of boys exceeding girls is even higher in this group than in the others.

This table shows that progress has been made, at least administratively. The practice of having pupils repeat grades year after year has become much more unpopular. The baffling question still remains, however, why is it that in spite of the improvement, more boys are represented in every case than girls? This table presents none of the causes but merely portrays a condition existing in Pennsylvania of which school officials should be cognizant and which should be corrected as rapidly as the causes for this condition can be isolated. Many school systems throughout the State no longer have pupils repeat a grade more than once, feeling that the law of diminishing returns begins to operate when pupils are retained for a longer period. This is a desirable step but it probably represents only one of the many things which must be done to alleviate this condition.

E. Overageness in Districts of the Third Class

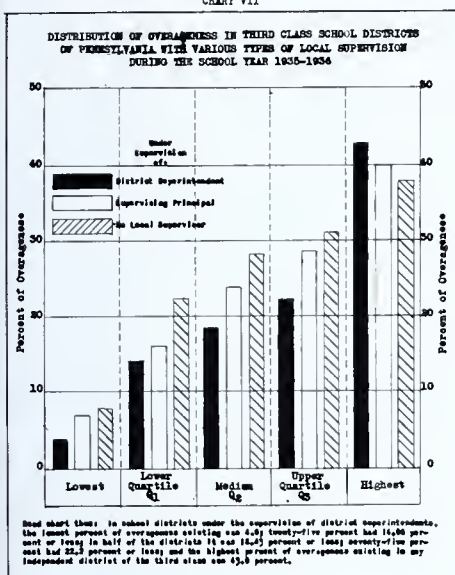
The next approach to the age-grade problem is devoted to third class districts bearing in mind the administrative structure for supervision. Third class school districts in Pennsylvania may be classified under three headings relative to local supervision. One hundred fifty-one third class districts maintained district superintendencies. Of the remaining 102 districts directly under the supervision of the county superintendents eighty districts had supervising principals, while in the remaining twenty-two there were no local professional administrators except the county superintendent.

TABLE 16. DISTRIBUTION OF THE PERCENT OF OVERAGENESS IN THIRD CLASS SCHOOL DISTRICTS DURING THE SCHOOL YEAR 1935-1936

Point Measure	Under Supervision of		
	District Superintendent	County And Supv. Prin.	Superintendent Only
Lowest	4.0	7.0	8.0
Lower Quartile Point (Q ₁)	14.1	16.3	22.3
Median (Q ₂)	18.4	23.7	28.0
Upper Quartile Point (Q ₃)	22.2	28.6	31.0
Highest	43.0	40.0	38.0
Quartile Deviation (Q)	4.1	6.2	4.4
Number of Schools	151	80	22

These facts can be gleaned from Table 16 and Chart VII which specify the lowest and highest degrees of overageness as well as the quartile points. If we disregard the lowest and highest scores which are given more to determine range than for any other reason, it becomes evident that the lowest percent overageness in third class districts occurred in those districts having district superintendents. The lower quartile point, the median, and the upper quartile point being 14.1, 18.4, and 22.2 as compared with 16.3, 23.7, and 28.6 for the districts maintaining supervising principals. Both of these types of districts were exceeded by those districts which did not have a local professional administrative officer in which case the quartile points were 22.3, 28.0, and 31.0 respectively. It should further be noted that there was less variation in the districts maintaining district superintendents where the quartile deviation was 4.1 as compared with 6.2 in those districts having supervising principals and 4.4 in those districts having neither district superintendents nor supervising principals. The reader must again, however, accept these figures with caution inasmuch as there are only twenty-two districts in

CHART VII



the third category. It probably does show, however, that promotion practices are more regular in third class districts maintaining superintendencies than the other two types. County Superintendents in Pennsylvania have always had far too much responsibility thrust on them as far as supervision is concerned. It was next to impossible to visit any school system more than once or twice a year and since 1929 many counties were deprived of assistant superintendents because of enacted legislation which attempted to lower administrative costs. These data again do not provide conclusive evidence, but they do show sufficient facts to indicate that this problem should also be studied further by local districts and counties.

F. Overageness in Schools with Various Numbers of Teachers

In the past it has been the custom of the Department of Public Instruction to assemble age-grade conditions in individual schools. The reports were summarized by county superintendents, district superintendents, and supervising principals. However, the Federal project carried on in Pennsylvania as well as other states which assembled data in connection with reorganization of units, included age-grade conditions in schools with various numbers of teachers. It was possible in this study to use the data of forty-seven counties in Pennsylvania, the study having been sufficiently comprehensive in these counties to be of value for the purposes desired here. The counties represented covered all sections of the State so it can be safely said that every type of locality in the State was sampled.

Tables 17 and 18 and Chart VIII present overage conditions in one-teacher schools; two-teacher schools; schools with three, four, or five teachers; schools having six, seven, eight, or nine teachers; and ten or more teacher schools. The first step was to determine whether there was any difference in overageness as a whole in schools with various numbers of teachers. Table 17 shows the mean

TABLE 17. CENTRAL TENDENCY, VARIATION AND DIFFERENCES IN PERCENT OF OVERAGENESS EXISTING IN SCHOOLS WITH VARIOUS NUMBERS OF TEACHERS UNDER SUPERVISION OF COUNTY SUPERINTENDENTS IN FORTY-SEVEN COUNTIES OF PENNSYLVANIA DURING SCHOOL YEAR 1935-1936

Type of School	Mean	Standard Deviation	Difference between Mean Percent of Overageness and that of Ten or More Teacher Schools	Chances in 100 that Difference Is Significant
One teacher	25.96	6.90	4.96	99.4
Two teacher	24.65	7.51	3.65	95.4
Three, four, five teacher	24.00	6.48	3.00	97.3
Six, seven, eight and nine teachers	22.43	6.40	1.43	82.4
Ten or more teacher	21.00	8.02	-	-
Total	23.15	6.53	-	-

percentage of overageness existing in the various types of schools, the variability as expressed by the standard deviation, the difference in percent of overageness existing in schools with ten or more teachers as compared with schools with a lesser number of teachers, and the significance of the existing difference.

In the forty-seven counties studied, the percent of overageness decreases as there were more teachers in the school, the mean in the one teacher school being 25.96 which was the highest and the lowest in schools with ten or more teachers was 21.00. The greatest difference in the percent of overageness existing between ten or more teacher schools was found with the one teacher school where the mean percent of overageness was 4.96 percent in excess of that in the former type of school. It can be said with almost practical certainty that overageness is greater in one-teacher schools, for there are 99.4 chances in 100 that the difference is significant.

It will also be observed that overageness in two teacher schools and three, four, or five teacher schools is sufficiently in excess of that in ten or more teacher schools that it can be said that there are 95.4 chances in 100 that the difference in the two teacher schools is significant and 97.3 chances in 100 that the difference is significant in the case of three, four, or five teacher schools. There exists a difference of 1.43 percent (22.43-21.00) between the means of seven, eight, and nine teacher schools and schools with ten or more teachers. However, this difference is very small, the difference between the one teacher schools and the ten teacher schools being three and one-half times greater (4.96÷1.43). Furthermore, there are only 82.4 chances in 100 that the difference is significant when considering schools with six or more teachers and those with ten or more teachers. These figures show quite conclusively that overageness is more prevalent in schools with three, four, five or more teachers than in those schools with ten or more teachers and that we can be quite statistically certain that this is true. When deciding between six, seven, eight, or nine teacher schools as compared with schools of ten or more teachers, the issue is not nearly so clear cut.

TABLE 18. DISTRIBUTION OF THE PERCENT OF OVERAGENESS AS SHOWN BY VARIOUS POINT MEASURES IN SCHOOLS WITH VARIOUS NUMBERS OF TEACHERS UNDER THE SUPERVISION OF COUNTY SUPERINTENDENTS IN FORTY-SEVEN COUNTIES OF PENNSYLVANIA DURING THE SCHOOL YEAR 1935-1936

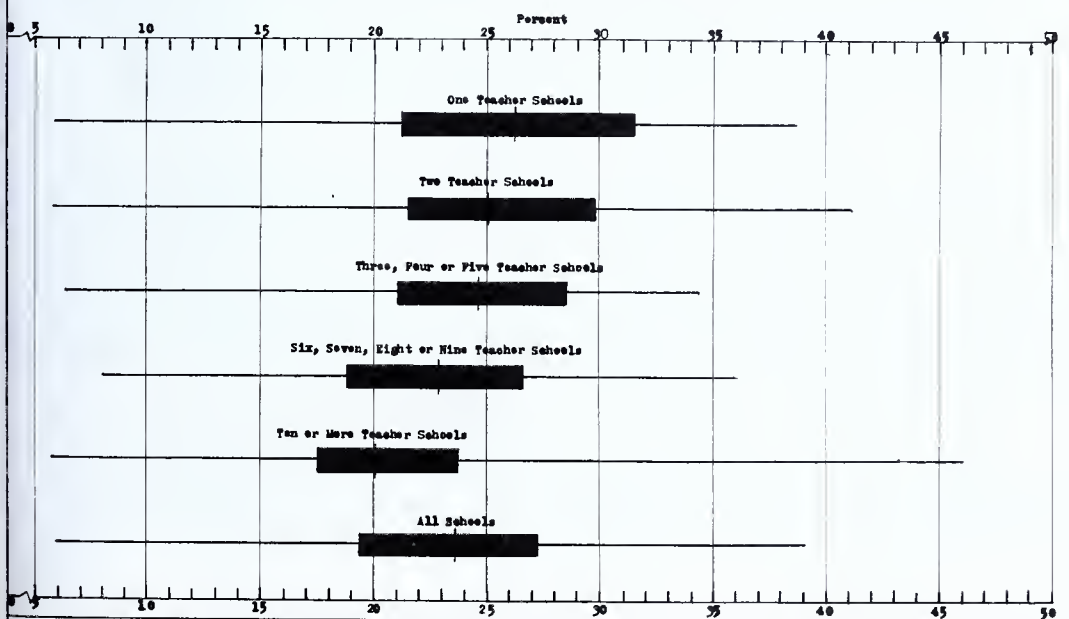
Type of School	Low	Lower Quartile Point-Q ₁	Median Q ₂	Upper Quartile Point-Q ₃	High
One-teacher	5.9	21.25	26.25	31.47	38.6
Two-teacher	5.8	21.42	25.05	29.75	41.1
Three, four, five-teacher	6.3	21.00	24.67	28.50	34.3
Six, seven, eight, nine-teacher	8.0	18.84	22.83	26.55	36.0
Ten or more teacher	5.7	17.50	20.14	23.63	46.0
Total	5.9	19.35	23.57	27.21	39.0

Read table as follows: The lowest percent of overageness existing on a county-wide basis in a one-teacher school was 5.9 percent; in one-fourth of the forty-seven counties overageness existed to the extent of 21.25 percent or less in a one-teacher school; in one-half of the same number of counties overageness existed to the extent of 26.25 percent or below; in twenty-five percent of these same counties overageness in the one-teacher schools existed to the extent of 31.47 percent or above; and the highest percent of overageness on a county-wide basis in the one-teacher schools was 38.6 percent.

Selection of a central tendency as a type for comparison reveals only a partial picture of existing conditions. Table 18 and Chart VIII indicate the percent of overageness in schools with various numbers of teachers by using the following point measures: low, lower quartile point, the median, the upper quartile point, and the high. The low and the high percent of overageness in the various types of schools is not nearly so significant. It can be seen by an examination of the

CHART VIII

THE DISTRIBUTION OF THE PERCENT OF OVERAGENESS AMONG PUPILS IN PUBLIC SCHOOLS WITH VARIOUS NUMBERS OF TEACHERS, AND UNDER THE SUPERVISION OF THE SUPERINTENDENTS OF FORTY-SEVEN COUNTIES IN PENNSYLVANIA, WITH RANGES AND QUARTILE POINTS INDICATED.



Read chart thus: The lowest percent of overageness existing in a one-teacher school was 5.9 percent, while the highest percent existing was 38.6. One-fourth (Q₁) of the two-teacher schools had more than 21.4 percent overageness, fifty percent (Q₂) of the two-teacher schools exceeded 25.1 percent, while one-fourth (Q₁) had less than 21.4 percent.

chart that there is considerable fluctuation in the low and high points. However, when the quartile points and the median are examined it can be seen that the percent of overageness has a tendency to decrease as the number of teachers in the schools increases. This generality was true in every case except that the lower quartile point for a two-teacher school was greater than for a one-teacher school, the percentages being 21.42 and 21.25 respectively.

Another interesting observation is that the median (20.14) for a school with ten or more teachers is lower than the lower quartile point for the following types of schools: three, four, or five-teacher schools (21.4); two-teacher schools (21.42); and one-teacher schools (21.25). Conversely, it is also true that the upper quartile point (23.63) in schools with ten or more teachers is less than the median in schools with five or less teachers, the median in a three, four, or five-teacher school being 24.67, the two-teacher school being 25.05 and the one-teacher school being 26.25.

These data show quite conclusively that as far as overageness is concerned, it seems to be reduced in schools with ten or more teachers.

The findings should be especially helpful in Pennsylvania during the next two years when the problem of merging school districts will be a paramount issue. Act 157, otherwise known as the Ruth Brownfield Bill which was passed during the 1937 Session of The General Assembly provides that, between July 1, 1938 and January 1, 1939, districts employing no teachers during 1936-1937 shall be merged with other districts. The other feature of the Bill which is much more comprehensive requires that the county superintendent in conjunction with the county board of education makes recommendations for the merging of districts with ten or less teachers with other districts on and after July 1, 1941, providing the voting populace approves such merger in the municipal election in 1939. It is thus evident that in considering this problem, desirable attendance units must be considered and as a natural consequence the number of teachers in a school having desirable attendance units must be given serious consideration. Findings such as the above should prove very helpful in proposals for the merging districts.

Overageness is one indication of school progress and adjustment and even through in some localities it may be entirely impossible to have a school with ten or less teachers, the data show quite conclusively that as far as this factor is concerned, there should be at least six, seven, eight, or nine teachers in the school to reduce overageness to a minimum.

G. Status of Overageness in the Upper Six Grades When Organized under the 8-4 Plan as Compared with the 6-6 or 6-3-3 Plan.

In Pennsylvania at the time this age-grade study was made, there were about 1092 secondary schools distributed among the following grades: IX-XII, VII-XII, VII-IX, and X-XII. The following are the percent of schools having each type of organization: IX-XII, 48.1 percent; VII-XII, 28.4 percent; VII-IX, 18.1 percent; and X-XII, 5.4 percent. It is thus evident that there exists approximately one four-year high school for every junior-senior, junior, and senior high school. This indicates that the new type of secondary organization has become widely adopted. The question as to the relative advantages of the two types of organization is somewhat a moot one for not all educators agree that secondary education should be limited to the upper six grades.

This bulletin approaches this problem only on the basis of overageness existing in the upper six grades, those grades affected by secondary school reorganization. It was possible to classify third class school districts of Pennsylvania as to the type of organization existing in the particular school

district. Data were obtained from 212 districts of which 114 were organized under the 8-4 plan and the remaining 98 under the 6-6 or 6-3-3 plan. It was thus possible to determine the distribution of overageness in each of the upper six grades affected according to type of school organization.

TABLE 19. COMPARISON OF THE DIFFERENCE IN THE PERCENT OF OVERAGENESS IN PUBLIC SECONDARY SCHOOLS OF THIRD CLASS SCHOOL DISTRICTS IN PENNSYLVANIA WITH THE 8-4 ORGANIZATION AND WITH THE 6-6 or 6-3-3 PLAN DURING SCHOOL YEARS 1935-1936

Type of Organization	Number of Districts	Mean Percent of Overageness	Standard Deviation	Excess Overageness Under 8-4 Plan	Chances Overageness is Greater Under 8-4 Plan
6-6 or 6-3-3	98	18.3	5.46	-	-
8-4	114	20.9	5.86	2.6	100

It is obvious from Table 19 that the mean percent of overageness in the districts in the 8-4 plan was 20.9 as compared with 18.3 in those districts maintaining secondary education through the upper six grades. The amount of overageness on the average was 2.6 percent greater in school systems maintaining a four-year secondary school. This difference even though not large is significant.

Chart IX presents a detailed distribution of overageness in each of the ninety-eight districts organized under the 6-6 or 6-3-3 plan and the 114 districts organized under the 8-4 plan. It is evident that the greatest difference existed in Grade VII where there was a greater percentage of overageness in school systems maintaining four-year high schools throughout the entire distribution. In Grade VIII even though the median points are identical, overageness was greater in the lower twenty-five percent and the upper forty percent of the districts maintaining four-year high schools.

Grade IX indicates that even though the median percent of overageness is slightly greater in the school systems maintaining the secondary school program for six years, still overageness was less in the upper thirty percent of the schools maintaining a six-year secondary program than in the upper thirty percent of the schools maintaining a secondary four year program.

In Grade X overageness is slightly greater throughout the entire distribution in districts with the 8-4 plan save the possible exception of the lower two percent of the schools in each group.

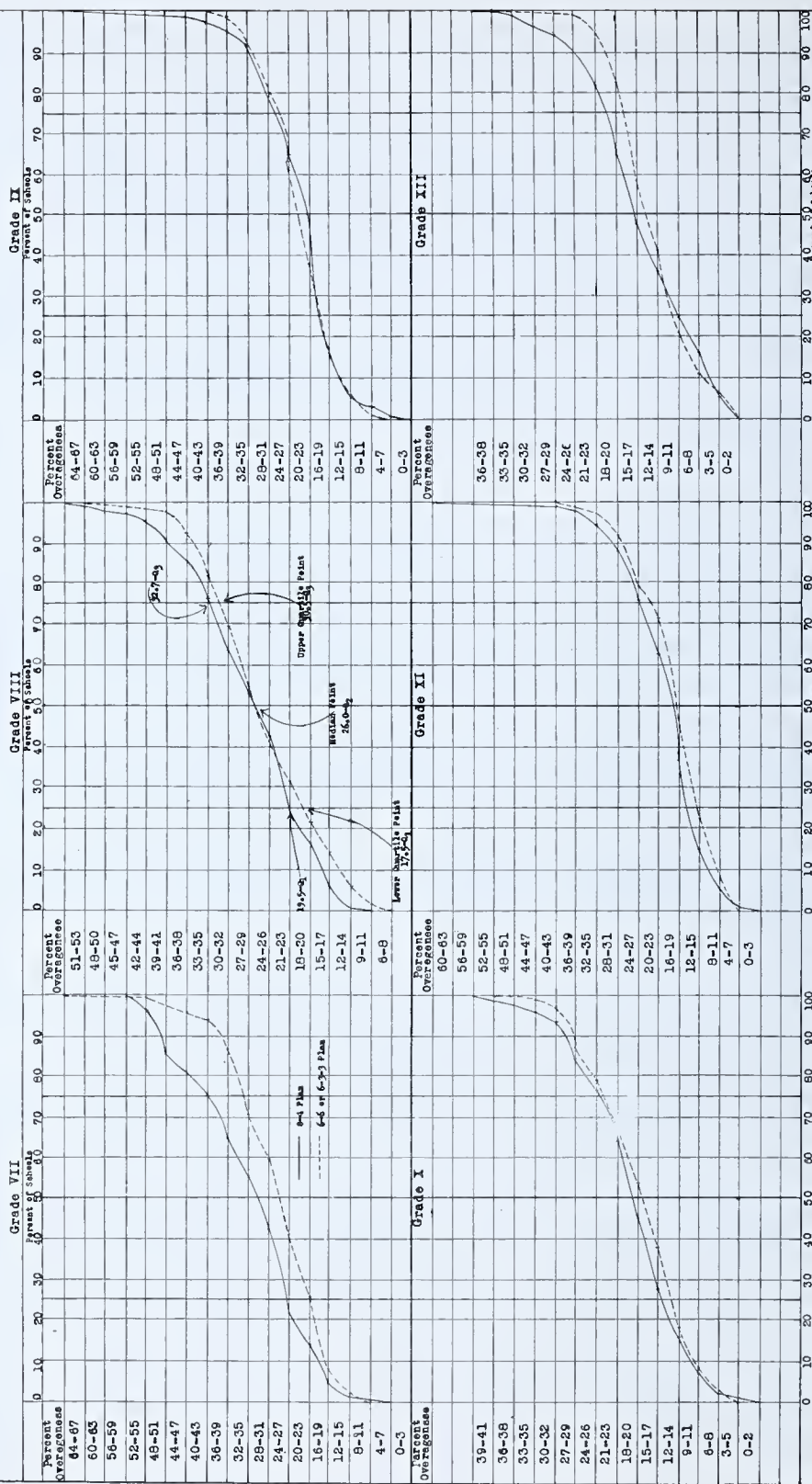
Grade XI presents the same type of picture, while in Grade XII even though in the lower fifty percent of the districts with the 8-4 plan as compared with the 6-6 or 6-3-3 plan, there is some overlapping, the difference in the amount of overageness becomes quite pronounced in the upper half of each group.

Several interesting problems are revealed through this study which merely indicates the status of overageness.

Age-grade studies made in October record ages as of September 1, so that the influence of junior high school should not have affected the percentage of overageness. It may be, however, that pupils are promoted more regularly in

CHART IX

A COMPARISON OF THE PERCENTILE DISTRIBUTION OF OVERAGES IN THIRD CLASS SCHOOL DISTRICTS OF PENNSYLVANIA MAINTAINING SECONDARY SCHOOLS WITH THE 8-4 ORGANIZATION AND THE 6-6 OR 6-3-3 ORGANIZATION DURING THE SCHOOL YEAR 1935 - 1936



Read Chart thus: In Grade VIII twenty percent of the schools organized under the 8-4 plan had 19.5 percent or less of overages, and conversely eighty percent of the schools under this plan exceeded 19.5 percent overages. However, in schools organized under the 6-3-3 or the 6-6 plan, twenty percent had 17.5 percent or less overages, and conversely in eighty percent of the schools overages exceeded 17.5 percent. The upper quartile point (Q3) for schools under the 8-4 plan is 32.7 percent, which is equivalent to stating that in twenty-five percent of the schools of this type, overages exceed 32.7 percent, while in the reorganized schools, twenty-five percent have overages exceeding 30.3 percent. The median (Q2) for each type of organization was 26.0. Any percentile point can be determined in a similar manner.

school systems where junior high school opportunities are available. During the periods that pupils ordinarily attend Grades VIII and IX they may be excused from school providing they reached sixteen years of age or have a farm or domestic permit. Chart IX clearly indicates that the difference in overageness seems to be less in Grades VIII and IX than in any of the other six grades. Does this mean that pupils have a greater tendency to remain in schools which have better high school opportunities or does it imply that overageness has a tendency to increase in the junior high school grades? This represents a fruitful field for further investigation. The supposition may be true because the difference in overageness begins to become slightly more pronounced in Grades X, XI, and XII.

IV SUMMARY AND CONCLUSIONS

A. Summary of Findings

Age-grade Conditions on a State-wide Basis

1. Overageness in the public schools of Pennsylvania during the school year 1935-1936 gradually increased beginning with Grade I, reaching its maximum peak in Grade VII, and then gradually receding throughout the upper grades.

2. On a state-wide basis underageness existed to the extent of fourteen percent, normal age pupils represented sixty-four percent, while twenty-two percent were in the overage group.

Age-grade Conditions in the Various Classes of Districts

3. Overageness has been considerably reduced during the decade studied in all types of districts. The reductions in overageness from 1925-1926 to 1935-1936 were as follows: first class districts, from thirty-six to twenty-two percent; second class districts, from twenty-seven to twenty-one percent; third class districts, from twenty-nine to twenty-one percent; in fourth class districts under the supervision of the county superintendent, from thirty-two to twenty-three percent, and for the entire State, from thirty-one to twenty-two percent.

4. Overageness over the ten-year period has been reduced to such an extent in elementary schools that it is now practically identical with that in secondary grades, the percentages being as follows: elementary and secondary in the order named: State-wide, twenty-three and twenty-two; first class districts, twenty-three and twenty-two; second class districts, twenty-one and twenty-two; third class districts, twenty-one in each case; and fourth class districts, twenty-four and twenty.

Variation of Age within Grades and Distribution of Pupils of Constant Ages

5. There was much more of a tendency for pupils of a given age to be placed in the appropriate grade in 1935-1936, the greatest improvement being at the fourteen-year level. The age-group having the fewest in the most appropriate grade was the fifteen-year-old pupils.

6. There has been a decided improvement in grade placement of thirteen-year-old pupils, even though pupils of this age still appear in each of the twelve grades. Comparisons of the percent in each grade during 1925-1926 and 1935-1936 follow: Grade VIII - 28.8 percent and 42.5 percent; Grade VII - 27.2 percent and 24.6 percent.

7. The number of thirteen-year-old pupils enrolled in Grade VII or VIII was increased from 56.2 percent to 67.1 percent over the ten-year period studied.

8. The median ages of the pupils in each of the twelve grades have been reduced during the ten-year period 1925-1935. The decrease in the median age for the grade range from .02 years in the twelfth grade to .41 and .40 at the fifth and sixth grade level.

Age-grade Conditions with Sex as a Variable

9. Age-grade conditions among both sexes were found to be as follows when all twelve grades were taken into consideration:

Age-grade Condition	1935-1936 Percent		1925-1926 Percent	
	Boys	Girls	Boys	Girls
Underageness	12	16	10	13
Normal	61	66	55	59
Overageness	27	18	35	28

10. Overageness reached its maximum in the sixth grade during the school year 1925-1926 when the percentages for the boys, girls, and total were 46, 38, and 42. The maximum amount of overageness was reached in 1935-1936 in Grade VII where the percentages in the same order were 36, 25, and 31.

11. The greatest amount of overageness for any age-group occurred in 1925-1926 among the $14\frac{1}{2}$ and $15\frac{1}{2}$ year-old boys who were overage to the extent of sixty-five percent and $14\frac{1}{2}$ year-old girls attaining a maximum of fifty-five percent for their sex. Ten years later overageness was highest in the $15\frac{1}{2}$ year-old group of each sex, the percentage for boys being fifty-one percent and for girls thirty-seven percent, the latter also attained by $13\frac{1}{2}$ year-old girls.

12. The excess of boys overage of that over girls in 1925-1926 was 125 percent, whereas, in 1935-1936 the boys overage exceeded the girls by 150 percent, overageness being twenty-five percent more prevalent at the latter period.

Overageness in Districts of the Third Class with Various Types of Local Supervision

13. Overageness in third class districts was less prevalent in those maintaining a district superintendency.

Overageness in Schools with Various Numbers of Teachers

14. In forty-seven counties for which data were available the mean percent of overageness in schools with only one teacher was 25.96; in schools with only two teachers 24.65; schools with only three, four or five teachers 24.00; schools with six, seven, eight or nine teachers 22.43; and schools with ten or more teachers 21.00.

15. The median percent of overageness of these forty-seven counties in schools with one teacher was 26.25; schools with only two teachers 25.05; schools with three, four or five teachers 24.67; schools with six, seven, eight or nine teachers 22.83; and schools with ten or more teachers 20.14.

Status of Overageness in the Upper Six Grades

16. The mean percent of overageness in the upper six grades of third class school districts with the 8-4 organization was 20.9 as compared with 18.3 percent in those third class districts maintaining a 6-6 or 6-3-3 organization.

B. Conclusions

1. Overageness has been considerably reduced in Pennsylvania from the school year 1925-1926 to 1935-1936 regardless of the class of district and regardless of grade. It is true, however, that overageness has been reduced to a larger extent in the elementary grades than the secondary grades largely because of the fact that it was more prevalent there.

2. Overageness gradually increases through the seventh and eighth grades when it gradually decreases, but underageness remains practically constant in all grades. This indicates desirable practices throughout the State in that it seems undesirable to have pupils skip grades, it being much better to provide enriched work.

3. Pupils within grades are more homogeneous as far as grades are concerned than in 1925-1926. Thirteen-year-old pupils could still be found in every grade in 1935-1936 but by and large they were in the seventh and eighth grades where they properly belonged. The outcome of this general trend has been for a reduction in the median age of the pupils of every grade in the public schools.

4. Overageness in spite of the fact that there was a decided reduction in both sexes existed in greater proportion among the boys in 1935-1936 than in the period ten years earlier.

5. The percent of pupils overage decreased as the numbers of teachers per school increased from one to ten or more teachers, the greatest percent of over-age pupils being found in one-teacher schools.

6. There is a tendency for overageness in the upper six grades to be greater in those third class school districts with the 8-4 organization than in those maintaining either the 6-6 or the 6-3-3 organization, the difference being least pronounced in Grades VIII and IX.

C. Inferences

1. Splendid strides have been made throughout the State in reducing excessive overageness but there still exists a real challenge to improve the conditions further.

2. With the compulsory attendance age being raised from sixteen years to eighteen years two years hence, overageness may present itself as a bigger problem than it has in the past and unless school systems throughout the State make a concerted effort to adjust the schools to these types of pupils remaining in school for two additional years, overageness may exist to a greater extent in the future than at the time this study was conducted.

3. Every school system should make a careful analysis of the ratio of overageness among boys to that present among girls. If the difference exists such as data on a state-wide basis show, numerous studies should be conducted to alleviate this condition.

4. There seems to be some evidence that a school having a local supervisory official in charge seems to have better promotional practices as judged by the third class school districts of the State. In some districts supervision has been even more drastically reduced in the past five years when the number of assistant county superintendents were diminished throughout the State. This reduction means that in many counties, it is almost impossible for the county superintendent or his assistants to visit a teacher more than once a year.

5. The data seem to prove that a school should have at least six, seven, eight, or nine teachers as a very minimum and better still ten or more teachers, if possible, in order to reduce overageness to a minimum. This is further evidence for county superintendents and county boards of education to bear in mind when planning the proposed mergers of school districts with ten or less teachers with other districts. Their proposal after being approved by the judges of the court of common pleas and certified by the county commissioners will be presented to the electors for approval in 1939, the proposed merger becoming enacted in 1940.

6. As far as age-grade conditions are concerned, there seems to be slightly less overageness existing in the school systems where the upper six grades are included in the secondary division than in those which include only the upper four grades. Even though the difference was small, it appeared significant, but not nearly so large as one would have anticipated, nor as great as adherents would claim in the way of a curriculum better adjusted to pupil needs in the junior high school. Two intangible factors are brought out by these results. First, overage conditions in the seventh grade indicate that the promotion practices in districts with the six-year secondary school plan are more liberal. Overageness then begins to increase in the eighth and ninth grades to such an extent that they are almost the same as in the traditional organization. Why is this true? It can probably be inferred that many re-organized school systems still promote by grades rather than by subject. This would have a tendency to increase overageness. The claims made for the reorganized secondary organization being more flexible should have been more manifest here.

7. The other intangible appearing in connection with this problem is the number of drop-outs from schools organized under the 8-4 plan and those organized under the 6-6 or 6-3-3 plan. It was impossible in this study to attempt a solution to this problem because data were not available. A cooperative study projecting further into this problem would be helpful if schools with each type of organization would carefully check overage conditions in the upper six grades. At the same time the number of students dropping out of schools should be determined including the grades in which these drop-outs were last enrolled. This would be a very valuable study and would reveal further light on this particular problem whose present conclusions are more or less hypothetical and not fully established.



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